FEBRUARY, MDCCCLIV.

THE ZOOLOGIST:

A

POPULAR MONTHLY MAGAZINE

OF

NATURAL HISTORY

AND

JOURNAL FOR RECORDING FACTS & ANECDOTES

RELATING TO

QUADRUPEDS, BIRDS, REPTILES, FISHES, ANNELIDES,
INSECTS, WORMS, ZOOPHYTES, &c.

THEIR HABITS, FOOD, RETREATS, OCCASIONAL APPEARANCE,
MIGRATIONS, NESTS AND YOUNG.

No. CXXXVI.

LONDON:
JOHN VAN VOORST, PATERNOSTER ROW.

Price ONE SHILLING.

E. NEWMAN, 9, DEVONSHIRE STREET

Entomologicul Localities. By J. W. DOUGLAS, Esq.

(Continued from page 4001).

TERRA INCOGNITA.

THERE is a mystery respecting those persons who, having been ardent entomologists, blazing for a time like comets, like them also vanish. Keats, the poet, it is said, "was snuffed out by an article;" — a very definite one it must have been! Entomologists are men of sterner stuff; and though they have at times been impaled on the point of a pen dipped in gall, there has been only a passing irritation; none of them ever died of such a wound. And yet, the passion appears to die out with some before its time. Does the *afflatus* become extinct, or is it not rather overlaid with the pleasures of sense or the cares of life? Every one that drops Entomology, has lost some of the higher enjoyments of his nature, even though he has been but a collector of specimens. It is common to decry the mere collector, and to exalt the cut-and-dry naturalist of books and systems. Neither course is necessary or proper; they are mostly two different kinds of men; the qualifications required for the two employments are seldom conjoined in one individual, and without the collector the book-maker could not exist. The out-door naturalist has a higher source of beauty and impulse to devotion open to him, and his occupation should rank higher in our estimation. I know men who have devoted a life-time to collecting, — wandering in the woods and fields; and if they are not saints, still, who shall say how much better they are for the amenities of Nature with which they have been so familiar, than they would have been without such influences!

Constant change is a law of Nature, and the great charm of human existence is a corresponding love of the novelty. Gray, the poet, himself a naturalist, said the best way to enjoy life was constantly to have something going on; the naturalist, and especially the entomologist, is always in a position to fulfil this condition, and is the last man to find time hang heavy on his hands. I know his employment has been called "busy idleness;" and in this country, where the majority of the inhabitants are either engaged in trying to avoid being killed by the climate, or, escaping this Scylla, fall into the Charybdis of commerce, and are used up in its service, it may seem so; and yet it might very advantageously be used to palliate the *ennui* of the one

BRITISH MUSEUM

of these classes or the exhaustion of the other. "Heaven lies about us in our infancy," says Wordsworth; the entomologist may in truth say it still surrounds him in his maturer age, simply because he has not, like those who cavil at him, suffered the cares of life to spread their mist over the meridian of his existence. After all, the value of Entomology lies not so much in the boundless extent of materials it affords for mental employment, as in its reflex action on the minds of its students: but this view of the subject deserves a chapter to itself, and some day I may write one.

My chief object in writing now is to persuade apathetic collectors, and, it may be, some who have never collected insects at all, that however industriously any district may have been worked, it may still be deemed a "*terra incognita*." On the cover of his 'Nomenclature' Mr. J. F. Stephens records the occurrence at Coombe Wood of Cucujus ater, *Oliv.*, upon ground that he had investigated for twenty years and upwards; and in his own garden at Kennington, a spot continually under his eye, he one day found Selandria sericans, *Hartig*, a new British species of Tenthredinidæ. Such cases continually come under our notice, and many instances might be adduced to show that even when man has altered all the features of a country, and "annexed" the land to his dwellings, if he has destroyed some races of insects entirely, he has given an impulse to the propagation of others. But I am now more concerned to state that on the same ground, without very apparent changes, the produce varies in quality and quantity year by year, and that every season will offer something fresh. Then new methods of capture come into operation, and lo! a new creation seems to arise. Witness the number of species and the quantities of specimens of moths, with which *sugar* has made us acquainted. *Lights for attracting* require to be more tried in proper localities: many rarities, and probably novelties would result. *Digging for pupæ* is a method that, in the hands of a person like the Rev. Joseph Greene, leads to surprising consequences. *Rearing from the larva state* has still too few adherents; a rich harvest is to be gathered, especially in the Pyrales, Tortrices, and Tineæ. *The fumigating principle* has also to be more extensively tried; I have no doubt it will diminish our list of rarities. All this is to be done with Lepidoptera, and the field in the other Orders, with the exception perhaps of the Coleoptera, is not better occupied.

Let no Diogenes, then, who occupies himself only with the insects of his native land, fancy he has exhausted his quota, and listlessly retire into his tub; nay, even then, the narrow limits of his observation would afford more entomological questions than he could answer, and prove a "*terra incognita*" for him to explore.

There are, nevertheless, a few Alexanders among us, who sigh for more worlds to conquer. So be it. Be it our business to work up the Entomology of Britain; let it be theirs to do their best for the lands to which fortune or favour may direct them. I wish there were more such men; for, as it is, the field is disproportionate to the labourers, and ere long there will be many more openings. China, for instance, what a glorious chance for a life-time of collecting new forms in a new country — unknown to naturalists, except in part by one Englishman —

"O *fortunatus* puer!"

Can there be any dangers or difficulties in that flowery land sufficient to deter? Who will go up and possess it? Then, again, Japan! — where, after our Brother Jonathan has employed the gentle persuasives of his gunpowder in the cause of the almighty dollar, — will no one follow his philanthropic footsteps for the purposes of Entomology?* India, and the isles of the Indian Seas, rich as they must be beyond all idea, would absorb many devotees of the science. Africa, mostly unknown, and Australia as little, cry out for more, and, behold! we have no *corps de reserve* of naturalists to occupy the posts as opportunities occur. Commerce itself, to the inordinate attention to which may be traced the apathy with which Natural-History science is generally regarded, may eventually be more deeply injured than is thought, by the absence from new countries of observers of their productions, and which, only after a long interval, become articles of trade. It is surely time that England taught her sons, through her public schools, so much of the myriad forms of vegetable and animal life, that when, in fulfilment of their presumed destiny to wander over the earth, they alight in a new country, they may not find it to be quite so much as now a "*terra incognita*."

This is now, therefore, no time for any one, to whatever department of Entomology he may have been attached, to hang up his armour or let it rust. Moreover, as our old commanders, one by one, fade into the spirit land, it seems more and more a difficulty to see among the rank and file those who are to supply their places; and a proper consideration of the subject would, I think, show that instead of any seceding from the cause, every one should use increased exertions to cultivate the science in himself and others.

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* Since this was written, news has arrived that Commodore Perry has given the Emperor twelve months to consider the President's letter, when he will call for the answer; if it be not favourable, why then——we shall see

J. W. Douglas.

Lee, Kent, November 3, 1853.

List of Lepidoptera captured near Aylesbury, Buckinghamshire.

By the Rev. Joseph Greene, M.A.

The readers of the 'Zoologist' have been made acquainted, through the communications of Mr. Douglas, Mr. Stevens, and others, with the entomological richness of the well-known Black Park, in the county of Bucks. The following list of insects captured by me during my residence of eighteen months at Halton, near Aylesbury, will show that that part of the county is not at all inferior to the above-mentioned locality.

Polyommatus Argiolus. Scarce, in Beech Wood, May.

Nemeobius Lucina. Abundant in Beech Wood, May.

Arge Galatæa. One, August 2. The capture of a *single* specimen of this insect is strange, as, though very local, it is common where it occurs. In Gloucestershire I found it, in some places, as abundant as the common cabbage white. The above was the only specimen I ever saw in Buckinghamshire.

Sesia Fuciformis. One, May 26, border of Beech Wood.

I have met with the empty pupa-cases of Ægeria Apiformis and Æ. Bembiciformis sticking out from the trunks of trees, but never saw the insects.

Sphinx Convolvuli. One female, July 17, hovering over honeysuckle.

Lithosia rubricollis. Extremely common in Beech Wood. Pupæ in abundance under moss on decayed trees. This insect appears to be subject, in an extraordinary degree, to the attacks of an Ichneumon. I collected about 300 pupæ last winter, and having distributed a considerable number, I kept the remainder: of these, only eight came to perfection, the rest producing only Ichneumons.

Lithosia aureola. Scarce, in Beech Wood, May, 1852.

„ griseola. Very common in hedges, and bred from larvæ found feeding on plantain, in June.

Orgyia Coryli. Larvæ and pupæ very common in Beech Wood. The larva is polyphagous, feeding on beech, maple, hazel, oak, &c.; the pupa is found under moss on those trees.

Trichiura Cratægi. One larva on hawthorn.

Pœcilocampa Populi. Pupæ at the roots of poplar, ash, and elm, scarce.

Platypteryx unguicula. This insect was extremely common last year in May, flying in Beech Wood, by day. The female is much rarer, and does not fly by day. It is double-brooded, as I bred it this year in August, from larvæ found on beech in July.

Cerura furcula and bifida. Larvæ on poplar and sallows; pupæ on trunks of poplars.

Stauropus Fagi. Five; two males: one female pupa under moss on beech, in Beech Wood, and two larvæ now in pupa.

Asteroscopus Cassinea. One larva on sallow.

Pterostoma palpina. Pupæ at roots of poplar; larvæ not very uncommon on poplar.

Notodonta Camelina. Larvæ and pupæ in great profusion, the former upon beech, oak, hazel, &c., the latter under moss on beech, in Beech Wood. I mention this species as affording a curious illustration of the uncertainty of appearance, in point of time, of some insects. I had about seventy pupæ this year; the first insect appeared on the 9th of May, the last not until the 4th of August.

Notodonta cucullina. About forty-five larvæ on maples, in Beech Wood. I took mine by beating, in August and September, and found maple-shrubs the most productive, especially such as were situated in the denser parts of the wood, a circumstance not usual, as far as my experience goes. Like others of this genus, it seems very subject to the attacks of an Ichneumon. It varies much in appearance, but, in healthy specimens, is generally of a dull green, with a dark patch on the anterior segments, and greatly resembles N. Dromedarius.

Notodonta dictæoides. Larvæ and pupæ not uncommon on poplar.

„ Dictæa. Larvæ and pupæ on poplar, much scarcer than dictæoides.

„ Dromedarius. Rare; twelve larvæ on hazels, but nearly all stung by Ichneumons.

„ ziczac. Larvæ very common on sallow and willow.

„ trepida. Five larvæ on oaks, four being stung.

„ Chaonia. Three larvæ on oaks, all stung.

Ptilophora plumigera. One larva on maple, May; produced the perfect insect October 27.

Gluphisia crenata? I am in hopes that a larva, beaten from poplar, is this insect.

Semaphora tridens. Scarce; larvæ on hazels, September.

Acronycta Alni. One larva on oak, which unfortunately died.

„ Ligustri. Pupæ in great profusion under moss on beech and ash, Beech Wood.

Ceropacha ocularis. Two pupæ at roots of poplar.

„ Or. Larvæ not uncommon on some poplar shoots in Beech Wood.

Cymatophora viminalis. Larvæ on young willows, uncommon.

Miana arcuosa. At light.

Apamea unanimis. Larvæ hybernating under moss on poplars near marshy places: they turn to pupæ about the beginning of June, without feeding.

Cerigo Cytherea. Common at light.

Spælotis ravida. On lime-blossoms, rare.

„ pyrophila. One, on flowers of Syringa.

Agrotis corticea. Two, at light.

„ cinerea. Three, beaten out of beech, and seven attracted by light.

Neuria Saponariæ. Not uncommon at light.

Tæniocampa Populeti. Two pupæ at roots of poplar?

Tethea subtusa. By beating, and larvæ on poplar, May.

Cosmia diffinis. Pupæ at roots of elm, July.

Xanthia aurago and citrago. Larvæ on limes.

Cirrædia Xerampelina. One beautiful female beaten from ash.

Ash appears to be a favourite resting-place for the Xanthiæ and allied species, as, in addition to the above, I have beaten X. aurago, citrago and silago from that tree.

Dianthæcia carpophaga. One, at light.

Hadena adusta. Common, at light.

Aplecta advena. Ditto.

Geometra Papilionaria. Two pupæ at roots of oak.

Chlorochroma vernaria. Scarce, beaten from hedges.

Pericallia Syringaria. Not uncommon in the garden.

Eurymene dolabraria. Pupæ not very uncommon under moss on beech-trees in Beech Wood, but difficult to get without injury.

Ennomos illustraria. One pupa under moss on oak, Beech Wood, and larvæ ? on hazels.

„ fuscantaria. One larva beaten from ash.

„ Tiliaria. Larvæ beaten from poplars.

Aventia flexularia. Five specimens beaten from hedges.
Anisopteryx Æscularia. Male and female, pupæ at roots of elms.
Hibernia leucophæaria. Ditto, ditto.
„ rupicapraria. Ditto, ditto.
„ progemmaria. Ditto, ditto.
„ aurantiaria. Ditto, ditto.
„ defoliaria. Ditto, ditto.
Phigalia pilosaria. Ditto, ditto.

I mention these insects, as pointing out an easy method of obtaining apterous females. H. aurantiaria and defoliaria should be looked for not later than September. The larvæ select the dry corners about the roots of elms, sheltered from the rain &c: such a predilection have they for these little dry nooks, that there appears to be quite a struggle for the possession of them; and I have sometimes found as many as six and even seven cocoons all fastened together in one bundle! P. pilosaria, however, like Biston Betularia, seems to prefer the *edges*, and not the *corners*, of the tree.

Biston prodromaria. Pupæ at roots of oak.
„ Betularia. Pupæ at roots of elm, in plenty.
„ hirtaria. Pupæ at roots of elm, scarce.

Tephrosia consonaria. In immense profusion on trunks of beech-trees, in Beech Wood, at the beginning of May. The insect emerges from the pupa about two in the afternoon, at which time I have seen them by dozens drying their wings on the trunks of the trees. The male is not nearly so brightly coloured nor so distinctly marked as the female, and appears as if wasted or rubbed. This, however, is certainly not the case, as I have had the insect in all its stages, and have, as above remarked, repeatedly taken them immediately after emerging from the pupa. In all cases, the male presented the same dim and dusky appearance. This is one of the few insects I have taken in the pupa-state at the *roots* of trees in woods.

Boarmia Abietaria. A few specimens beaten from firs, Beech Wood.
Anticlea rubidaria. Five, beaten from hedges,
Phæsyle miaria. Pupæ at roots of birch.
Ypsipites ruberaria. Pupæ under loose bark of poplars.
Lobophora sexalisaria. Pupæ, I do not know at what tree.
Eucosmia undularia. Two pupæ; where found I cannot say.
Eupithecia sobrinaria. Not uncommon at light.
„ rufifasciaria. Two pupæ at roots of oak.
„ Fagicolaria? Extremely local, being confined to one open spot in Beech Wood, but very common there.

Eupithecia innotaria. Same locality, but very scarce.
„ piperaria. Ditto, ditto.
„ Centaurearia. Scarce, at light.
„ subfulvaria. Ditto.
„ pusillaria? Ditto.
„ succenturaria. One, beaten from a hedge, August.
„ togaria. Two, beaten from firs, Beech Wood.
„ subumbraria. Common, beaten from maples, ditto.

The commoner species are omitted from the above list.

JOSEPH GREENE.

47, Stephen's Green,
Dublin, December, 1853.

A few Notes on the Necessity for Rearing all the Tineidæ and other small Groups. By JOHN SCOTT, Esq.

THE success which has attended my search for, and the rearing of, the larvæ of the Tineidæ, small though it may seem, urges me to lay it before other Micro-lepidopterists, in the hope that it may induce some few of them to commence the rearing system for themselves, instead of the exchanging system which is so universal. I do not deprecate this last mode, as undoubtedly many insects are only to be obtained by this means by parties living in different localities, but still, from a want of knowledge of the insects in their earlier stages, we cannot tell to what extent this may hold good. Many things, no doubt, want only the looking for to be found, which, from the retired nature of the perfect insects, have hitherto escaped notice. And when we meet with them thus, and then only by one or two at a time, they are in general so much worn as to be scarcely fit to be called specimens. Now the larvæ of these insects, when once met with, are found in abundance, and it is only by minutely scrutinizing each plant, and exercising an abundant display of patience, that we can hope to find them. Besides, it is as easy to exchange the larvæ as the perfect insects; and perhaps tin boxes are best suited for this purpose, as they keep the food fresh while on its transit, whereas chip or pasteboard boxes would extract all the juices from the plants, and thereby deprive the larvæ of nourishment, and cause their death. Nor is there any fear to be apprehended from the post-office functionaries doing such a "heavy business" as to break through the lid or bottom, for I verily believe that they seem to hold it as part of their duty to be very *marked* in its performance. For rearing-glasses, I have used confectioners' show-glasses of various sizes. These are very cheap, and answer the purpose very well.

The number of unique insects to be met with in various cabinets throughout our island, is the first reason I would urge for the rearing system; the second is, that it is the only way to obtain a fine series of these smaller creatures, and is besides the only effectual way of determining whether these so-considered unique insects are distinct species or merely varieties. No doubt there are many who cleave to old systems with all the fondness of fathers, and who may be hard to convince that such systems are not true; and I believe it to be perhaps a difficult thing for many to forsake, without a struggle or a sigh, those forms and systems which they have followed from their childhood, and to adopt others without a murmur or an indignant thought at the inroads made into their seeming perfect schemes. But I would ask if such forms and systems are opposed to the keener observation of men of later days; if these later men have watched over all the changes, have noted the transformations, have watched all the irregularities of these species, and established such facts as do really exist; are not these men balancing the lists and giving to each insect its proper place? Let any one examine for himself the lists published a few years back, and compare them with those of recent date, and he will find how very diligent early authors have been in creating new genera and species, owing to their taking only the perfect insects which have been more or less subject to variation. See, for example, the Tortrices in Mr. Doubleday's list, or indeed many of the Noctuæ, and again in Mr. Stainton's list of Tineidæ, &c. This was collecting, in those days, and a variety of a very common insect in many cases stood as *unique* in Mr. So-and-so's collection. In our day, I maintain it to be our duty to work out from the foundation, so far as is practicable, the history of every insect with which we may meet, so that we may be enabled to see more clearly the wondrous workings of the Great Creator, and set at rest the little difficulties which have arisen in former days in regard to these unique specimens.

But though these mistakes have arisen, still there is a good deal to be said in their favour: for, if we trace back the history of insects a little way, we become astonished at the very few of our countrymen who have done anything towards advancing the pursuit of Entomology, indeed it seems to have been looked upon as a thing with which man had no reason for troubling himself about. "A lamentable thing that we should be troubled with these strange flies," since there was no money to be made by them; and the "loud laugh that spoke the vacant mind" has often been heard on seeing the peaceful "fly-catcher," net in hand, stealing away through the bushes, or, may be, chasing some prize. Nor is this quite worn out, although it is waning fast, and many are beginning to think that persons thus engaged have really discovered more than beauty in a butterfly's wing, and that the dirty disagreeable beetle must possess something which they had not hitherto observed. Surely,

> "Nought so vile that on the earth doth live
> But to the earth some special gift doth give."

Now there are modes of obtaining many of the larger genera and species which is not the case with the smaller ones; and these are so well known that I need not pause here to enumerate them, but will at once proceed to some of those larvæ which live inside the leaves of some of the grasses. No sooner does spring begin to clothe the fields in their garment of green, and revive by her grateful cares what the stern hand of winter had apparently crushed for ever, and long before the stately forest-trees are mantled, and their bare arms lost in the rich foliage; long before the bushes in the copses nod to each other so fantastically in their summer suits; long before the wood-banks give forth their balmy breath; these little prisoners of Providence have begun their work. Stormy March, sweeping over hill and dale, through wood and glade, across moor and common, down highway and byway, affects them but little; silently and ceaselessly they do their work. A little examination, and but a little, even thus early, of the grasses growing on dry hedge-banks, by the sides of pools, or, in short, wherever grass flourisheth, will reveal traces of the paths of miners down the leaves, or sufficient discolouration or other evidence thereon to lead to the detection of the cause of these injuries. The leaf requires only to be pulled up, and held between the eye and the light, when its occupant may be seen, if it has not left for another tenement.

Any one might hastily be apt to think that there could be no variation in the methods of mining,—that such narrow houses could never admit of any digression from a regular rule. This, however, is not the case. Some of these larvæ carry with them the whole breadth of the leaf in their passage, and never enter the stem; while others, again, make a passage in the leaf, just sufficient for their bodies to pass down, then another passage, and finally penetrate far down into the stem. Nor are the larvæ all of one colour, for some are pale, others greenish, and a third kind inclined to black; and it is not uncommon to find a pale larva eating up, and a dark one eating down, the same leaf, or *vice versâ*. These mining larvæ, so far as my own experience has gone in rearing them, have all proved to belong to the genus Elachista, and the perfect insects produced have been E. albifrontella, luticomella, bisulcella, and Cygnipennella: no doubt continued research will reveal many others, of which at present we know nothing in their earlier stages. Kilmunella, Bedellella, cerasiella, Rhynchosporella, Eleochariella, &c., are only known in their perfect state, and to rear any one of these would amply reward the collector for his trouble.

When about to assume their transformations, these larvæ quit the interior of the leaves, and either suspend themselves by a fine thread to some of the leaves, or descend to the ground, on the top of which they spin up, and make for themselves cocoons composed of a few loose particles of earth. To rear them is not a very difficult task, the great enemy to contend with being the Ichneumon; and therefore the collector must not be disheartened at the number which will die on his hands. The Ichneumon would seem to attack the larvæ when very young, as I have lain for a couple of hours beside a large tuft of Aira cæspitosa, filled with larvæ in various degrees of growth, without seeing the operation, and have afterwards brought it home, and from the whole lot which it contained, have reared but two or three moths. Sometimes the parasite only bursts forth in its perfect state, and at others when about to change to the pupa. I have taken as many as fifteen parasitic larvæ from a single caterpillar about three-eighths of an inch in length by a thirty-second in diameter. They were so closely packed and arranged, that they gave to the creature the appearance of a miniature chain cable.

My paper has become longer than I intended, and I must therefore conclude, under the hope I have already expressed that some will be induced to profit by it, and that next season the pages of the 'Zoologist' will attest the industry of those anxious to benefit their brethren and to increase their own knowledge of the study which they profess to combat with.

John Scott.

London Works, Renfrew,
December 6, 1853.

Micro-Lepidoptera taken near Clevedon.—The following were among my best captures during the early part of the past summer: —

Eulia ministrana, Norton Wood, end of May, flying at dusk.
Halonota trigeminana, beginning of June.
Retinia Buoliana, reared from shoots of Scotch fir, second week in July.
Ephippiphora perlepidana, near Walton Castle, third week in May.
Cnephasia obsoletana, July 19.
Syndemis musculana, one specimen by beating, Norton Wood, May 31.
Chrosis tesserana, Walton Down, middle of June.
Micropteryx mansuetella, cliffs towards Ladies' Bay, beginning of June.
Nematopogon metaxellus, by beating, Norton Wood, end of May and beginning of June.
Psecadia decemguttella, one specimen, July 4, at the root of a beech-tree on Walton Down.
Depressaria ultimella, May 25, by beating.
Gelechia cinerella, July 19.
Coleophora lixella, Walton Down, July 4.
Elachista albinella.
Lithocolletis Corylifoliella, Norton Wood, by beating, beginning of June.
Pterophorus microdactylus, end of June and beginning of July, on Walton Down and Elton Hill.
„ tetradactylus, Walton Down, beginning of July.

Together with some Nepticulæ &c., which I have not as yet satisfactorily determined. —*Alfred Merle Norman; Clevedon, Somerset, December* 23, 1853.

Mortar Cocoon of Cerura Vinula.— The instance of a puss-moth caterpillar forming a cocoon out of the tuber of a potato, when apparently driven to it by necessity through being confined in a glass vessel (Zool. 4107), brought to my recollection a most curious freak of this creature which I once had the pleasure of seeing. At the time (September, 1847), I was a boy at Winchester, and the following is an extract from my note-book: — "While walking round 'Meads,' I saw on the wall something which I mistook for a piece of mortar, but seeing that it looked newer than the rest of the wall, and projected a little from it, I pulled it off, and to my astonishment found it to be the cocoon of the puss moth, most admirably made out of the rotten mortar." Not the least curious part of the story is, that the moth came out quite perfect. The caterpillar, I imagine, had lived on a poplar growing close by, which was too young to allow of its forming its cocoon on the stem, and therefore it was driven to what I believe to be a totally novel expedient in insect architecture.—*Id.*

Capture of Larvæ of Dianthæcia carpophaga.—When I was in Derbyshire in July last, I took between thirty and forty larvæ of Dianthæcia carpophaga feeding upon the seeds of Silene inflata. It is generally, I believe, considered to be a very rare insect, but from observations which I have made during the last two years, I have reason to think it not nearly so rare (at least in the larva state) as it is generally thought to be. I have taken it in Flintshire, Derbyshire, Bucks and Herts; and have good reason to think that it may be found wherever Silene inflata grows in any abundance. The larva lies coiled up between the calyx and the seed-vessel of the plant. It is a very delicate caterpillar, and extremely difficult to rear. Though I have occasionally taken the larva for some years past, I never succeeded in rearing it, until last year, when I took a considerable number in Herts and Bucks, but only bred five moths, and this year I have only nine pupæ out of between thirty and forty larvæ. It almost invariably feeds upon the seeds of Silene inflata, although I have occasionally found it upon the flowers of the double variety of Lychnis dioica, and upon the seeds of Silene nutans.— *H. Harpur Crewe; Rossway, near Great Berkhampstead, Herts, November* 28, 1853.

Capture of some of the rarer Hydropori in the North of England.

By THOMAS JOHN BOLD, Esq.

HYDROPORUS elegans, *Illig.* I take a strongly marked variety of this common insect in Talkin Tarn, Cumberland. At first sight they much resemble H. 12-pustulatus, being much larger and darker coloured than the specimens of elegans from running water. Some have the elytra wholly black, except a narrow yellow margin; others are more or less lineated with yellow; and scarcely any of them have the spotted appearance characteristic of the species.

In dredging for this insect, I had a striking proof of an oft-noticed fact, that the "sunny side" of a pond is always the most productive. I worked for upwards of an hour on the north side of the lake (where I once met with it in plenty), but it being then in the shade of the neighbouring pine-trees, I did not get half-a-dozen specimens. On changing to the south and sunny side, however, I soon brought to light a sufficiency to make up for previous disappointment.

H. rufifrons, *Duftsm.* = H. piceus, *Steph.* I have, at different times, taken about a dozen of this conspicuous species. It frequents deep pools, and when secured in the net, marches from amidst the débris with a slow and stately gait.

H. nigrita, *Fab.* I know not whether this is in reality a rare species, or merely local. I have only once met with it, and then most unexpectedly. When broiling under an unclouded sun, on one of the wild Cumberland moors, my friend and I drew towards a spring, with the bibbing intentions of thirsty sportsmen; but our dogs having like propensities (though not so alcoholic), and a better local knowledge, getting there before us, soon rendered the water unfit for human consumption. On trying my net, I found that the well was tenanted, almost exclusively, by H. nigrita, which appeared to be confined to it; for although I tried many of the pools in its neighbourhood, not an individual could I find elsewhere.

H. Gyllenhalii, *Schiödte,* = H. rufifrons, *Steph.*

H. tristis, *Payk.*

H. obscurus, *Sturm,* = H. umbrosus, *Steph.*

These three species are dwellers in peat-bogs, and mossy holes, on wild elevated moors; I found all three in company, this last season, when in Cumberland at the latter end of July. H. Gyllenhalii is very rare; tristis and obscurus are more abundant, but by no means common. I have also taken them in similar localities in this district, but more sparingly. H. obscurus varies considerably both in size and colour, some specimens being almost minute.

H. memnonius, *Nicolai*. This variable insect is common with us, and appears to adapt itself to a great range of habitat, being found equally abundantly in ponds, ditches, streams, wells and horse-troughs. I sometimes fancy that the specimens from clear water are the most brightly coloured.

H. angustatus, *Sturm*, = H. tristis, *Steph*. Likewise common in our district, frequenting, by preference, the foulest ponds and ditches.

H. umbrosus, *Gyll.* = H. minutus, *Steph*. This, one of the most obscure, is one of the most local of our Hydropori. I met with it at Gosforth, where it frequents an extensive pond, which is almost choked up with Equiseta and other aquatic plants.

I have often noticed how exceedingly local are some insects in their distribution; and, in this instance, so much so, that I was strongly impressed with the necessity of examining every portion, however unpromising, of our hunting-ground. Though I had dredged all the likely and many unlikely ponds in the vicinity, yet had I always shunned this particular one; for having once or twice dipped my net into it in passing, such was its filthy condition, that I always shook out the unexamined contents with disgust. However, one day, in a very wet season, not being able to make progress elsewhere, from the damp state of the woods, I paid it a visit, and finding it clearer than usual, from being brim-full, I tried my net, and at the very first haul secured insects that I had in vain sought for elsewhere. After this, it scarcely need be mentioned, that I worked with a will, and finally came home richer by nearly a dozen species, every one of which was an addition to our local Fauna.

H. granularis, *Fab.* Not uncommon in one or two places in the district, where it is found in ditches accompanied by H. pictus.

H. geminus, *Fab.* This is one of our rarest species, and confined to one locality, where it is found very sparingly.

THOS. JNO. BOLD.

Angas' Court, Bigg Market,
Newcastle-on-Tyne, December 27, 1853.

Capture of an Aphodius in Cumberland new to the British Fauna.—In the month of August, 1852, a friend and myself made an excursion to Cole Fell, in Cumberland, hoping to meet with some of the insects dwelling in such elevated regions; but the day being sunless, the wind high, and accompanied by a drizzling rain, we were to a considerable extent unsuccessful. However, under cover of our umbrellas, we managed to pick up a fine series of Aphodius Lapponum, *Gyll.*, of all shades of colour, from red to jet black, and three specimens of Aph. alpinus, *Scop.*, *Erichs.*, = A. rubens, *Dej.*, *Muls.*, = A. dilata, *Heer.*; a species, I believe, not hitherto taken in this country.—*Thos. Jno. Bold; Angas' Court, Bigg Market, Newcastle-on-Tyne, December* 7, 1853.

Capture of Gracilia minuta near Sunderland.—My friend, Mr. Wm. Peacock, has taken a pair of the exceedingly graceful Gracilia minuta, *Fab.*, so far North as Sunderland; one of which he has kindly added to my collection. It forms a welcome addition to our local Fauna.—*Id.*

Re-occurrence of Bembidium Schuppelii in Cumberland.—Since recording the occurrence of Bembidium Schuppelii (Zool. 3289), I have taken, in August, 1852, another specimen; and a friend, whom I directed to the locality, procured no less than a dozen in the latter end of May last. In July, I carefully searched the same ground, without seeing even the shadow of a Bembidium; perhaps, like the greater part of the genus, it is most abundant during the spring months.—*Id.*

Catalogue of Coleoptera found in the Neighbourhood of Dublin.

By A. R. Hogan, Esq.

(Continued from page 4136).

Cercyon depressum, *St.* Sea-coast, Baldoyle, &c.
„ littorale, *Gyl.* With the former.
„ obsoletum, *Gyl.* Local.
„ hæmatorrhoum, *Gyl.* Roebuck.
„ laterale, *Gyl.* Local.
„ unipunctatum, *L.* Dunghills; flies about in warm spring days.
„ quisquilium, *L.* Roebuck.
„ melanocephalum, *L.* Portmarnock.
„ anale, *Pk.* Local.
„ Boletophagum, *Mm.* Moist places, in moss, &c.
„ atomarium, *F.* Roebuck.
Sphæridium scarabæoides, *F.* Common.
„ marginatum, *F.* Ditto.
Phalacrus æneus, *Ill.* Dodder banks.
„ corticalis, *Schön.* Taken by Miss M. Ball.
Ephistemus gyrinoides, *Mm.* Malahide.
„ confinis, *St.* Ditto.
Leiodes ferrugineus, *Schmidt.* Local.
„ thoracica, *St.* Portmarnock.
„ pallens, *St.* Local.
„ picea, *Ill.* Ditto.
„ arenaria, *Ste.* North Bull.
Colenis dentipes, *Gyl.* Local.
Clambus Armadillus, *Deg.* Malahide.
„ Enshamensis, *St.* Ditto.
Corylophus cassidoides, *Mm.* Ditto.
Ptomaphagus truncatus, *Ste.* Sea-coast.
Catops sericeus, *F.* Dodder banks, Portmarnock, &c.
„ tristis, *Pz.* Ditto.
„ Morio, *F.* Ditto.
„ angustatus, *F.* Moist places, roots of trees, &c.
Necrophorus humator, *F.* Rather scarce.
„ vespillo, *L.* Common.

Necrophorus ruspator, *Er.* Taken by the late Mr. Tardy.
„ mortuorum, *F.* Ditto.
Oiceoptoma rugosa, *L.* Abundant.
Silpha opaca, *L.* Portmarnock.
„ quadripunctata, *Ste.* The Dargle.
Phosphuga atrata, *L.* Not common.
„ subrotundata, *Mm.* Everywh.
Nitidula grisea, *L.* Kilruddery &c., on bones.
„ depressa, *L.* Ditto.
„ discoidea, *F.* Ditto.
„ æstiva, *L.* On flowers of hawthorn, Umbelliferæ, &c.
„ silacea, *Hbst.* Ditto.
„ pusilla, *Ill.* Ditto.
„ obsoleta, *F.* Ditto.
„ bipustulata, *F.* Local.
Meligethes viridescens, *F.* On flowers of Sinapis, &c.
„ æneus, *F.* Ditto: var. *cæruleus*, Mm., also occurs.
„ pedicularius, *Gyl.* Ditto.
Cateretes Urticæ, *F.* Not unfrequent.
„ pedicularius, *L.* Ditto.
Cychramus luteus, *F.* Local.
Micropeplus porcatus, *Pk.* Portmarnock.
„ staphylinoides, *Mm.* Ditto.
Trichopteryx fascicularis, *Er.* Dunghills.
„ grandicollis, *Er.* Ditto.
„ sericans, *Heer.* Ditto.
„ curtus, *Alib.* Ditto.
„ Kunzei, *Heer.* Ditto.
Anisarthria pusilla, *Gyl.* Malahide.
„ apicalis, *Gyl.* Local.
„ punctata, *Gyl.* Sea-coast.
Atomaria phæogaster, *Mm.* Local.
„ mesomelas, *Hbst.* Ditto.
„ nigriventris, *Ste.* Ditto.
„ fuscipes, *Gyl.* Ditto.
„ atra, *Hbst.* Ditto.
„ basella, *Ste.* Baldoyle.
Mycetæa hirta, *Mm.* Not unfrequent.
Sylvanus Surinamensis, *Ste.* In sugar-stores, &c.
Latridius lardarius, *Deg.* Local.
„ transversus, *Ol.* Ditto.
„ minutus, *L.* Ditto.
Corticaria pubescens, *Ill.* On walls and windows.
„ gibbosa, *Hbst.* Ditto.
„ ferruginea, *Mm.* Ditto.
Byturus tomentosus, *Deg.* (B. Rosæ, *Scop.* 1763). Local.
Typhæa fumata, *L.* Roebuck.
Cryptophagus scanicus, *L.* Dublin, on walls, windows, &c.
„ fumatus, *Gyl.* Local.
„ Ulicis, *Ste.* Phœnix Park, abundant.
„ Abietis, *Pk.* Malahide.
Antherophagus pallens, *L.* Local.
Monotoma picipes, *Pk.* Merrion.
Anommatus obsoletus, *Shuck.* Rochestown, in decayed potatoes, by *Mr. Molloy.*
Rhizophagus ferrugineus, *Pz.* Mount-Merrion demesne.
Trogosita Mauritanica, *L.* Local.
Dermestes lardarius, *L.* Taken by Mr. Tardy.
Attagenus pellio, *L.* Lumber-rooms &c., common.

Byrrhus pilula, *L.* Local.
„ varius, *F.* Portmarnock &c., on grass.
Simplocaria semistriata, *F.* Ditto.
Hister cadaverinus, *Pk.* Common.
„ carbonarius, *Pk.* Ditto.
„ purpurascens, *Pk.* Taken by Mr. Tardy.
„ bimaculatus, *L.* One specimen in Hume St., Dublin.
Onthophilus striatus, *F.* Roebuck, &c., not common.
Saprinus rotundatus, *Pk.* Portmarnock.
„ nitidulus, *F.* Ditto.
„ dimidiatus, *Pk.* Ditto.
„ æneus, *F.* Local.
Typhœus vulgaris, *Ste.* A dead specimen at Killiney; of frequent occurrence in Co. Wicklow.
Geotrupes stercorarius, *L.* Scarce; the var. (?) *foveatus*, Mm., is, however, abundant about Roebuck, &c.

Geotrupes putridarius, *Er.* Local.
„ sylvaticus, *F.* Ditto.
Aphodius erraticus, *L.* Phœnix Park, rare.
„ fossor, *L.* Roebuck, &c.
„ scybalarius, *F.* Not uncommon.
„ fœtens, *F.* Ditto.
„ fimetarius, *L.* Frequent.
„ ater, *Deg.* Roebuck.
„ sordidus, *F.* Ditto; very rare.
„ merdarius, *F.* Portmarnock.
„ prodromus, *Brahm.* Abundant
„ contaminatus, *Hbst.* Ditto.
„ rufipes, *L.* Little Dargle, &c.
„ depressus, *Kug.* Phœnix Park
„ marginalis, *Ste.* Common.
Ægialia globosa, *Ill.* Portmarnock.
Serica brunnea, *L.* Dodder banks.
Melolontha vulgaris, *F.* Near Rathfarnham; but I have not heard of its being found of late years.
Phyllopertha horticola, *L.* On wild roses in flower.
Adrastus limbatus, *Thbg.* Not unfreqnt.
Dolopius marginatus, *L.* Ditto.
Agriotes obscurus, *L.* Ditto.
„ lineatus, *L.* Ditto.
Limonius cylindricus, *Pk.* Taken by Mr. Tardy.
Agrypnus murinus, *L.* Local.
Hypolithus riparius, *F.* Ditto.
Cryptohypnus tetragraphus, *Germ.* Dodder banks.
Ctenicerus tesselatus, *L.* Taken by Mr. Tardy.
„ cupreus, *F.* On long grass in meadows, but does not appear every year.
Aplotarsus testaceus, *F.* Local.
„ rufipes, *F.* Taken by Mr. Tardy.
Athoüs hæmorrhoidalis, *F.* Abundant.
„ hirtus, *Hbst.* Local.
Cardiophorus testaceus, *F.* Ditto.
Atopa cervina, *L.* Somewhat local, and uncertain in its appearance.
Scirtes hemisphericus, *L.* Taken by Mr. Tardy.
Cyphon pallidus, *F.* Taken by Mr. Tardy.
„ marginatus, *F.* Local.
„ griseus, *F.* Ditto.
„ lividus, *F.* Taken by Mr. Tardy.
Lampyris noctiluca, *L.* Taken near Castle Knock, by M. J. O'Kelly, Esq.
Telephorus pellucidus, *F.* Not common.
„ bicolor, *F.* Ditto.
„ flavilabris, *Fall.* Roebuck &c.
„ thoracicus, *Ol.* Local.
„ nigricans, *Mlr.* Ditto.
Podabrus alpinus, *Pk.* Ditto.
Ragionycha melanura, *L.* Exceedingly abundant.
„ pallida, *F.* Local.
„ testacea, *L.* Taken by Mr. Tardy.
Malthinus biguttatus, *L.* Local.
„ brevicollis, *Gyl.* Portmarnock.
„ minimus, *L.* Taken by Mr. Tardy.
Necrobia quadra, *Mm.* Local.
Ptilinus pectinicornis, *L.* College Park.
Ptinus fur, *L.* Local.
„ crenatus, *F.* Ditto.
„ hololeucus, *Fald.* Common.
Anobium castaneum, *Kug.* Taken by Mr. Tardy.
„ striatum, *Ol.* Abundant.
Ochina Hederæ, *Mlr.* Dunsink.
Cis Boleti, *Scop.* In Boleti on trees.
„ nitidus, *F.* Not common.

Tomicus micrographus, *L.* Bray.
Hylastes ater, *Pk.* Near Rathfarnham; very rare.
Cossonus Tardii, *Cts.* Not nearer than Powerscourt.
Mecinus pyraster, *Hbst.* Portmarnock.
Gymnaëtron noctis, *Hbst.* Not common.
Cionus hortulanus, *Mm.* By Mr. Tardy.
Calandra granaria, *L.* Corn stores.
„ Oryzæ, *L.* Ditto.
Nedyus assimilis, *Pk.* Local.
„ pollinarius, *Forst.* On nettles.
„ troglodytes, *F.* Baldoyle.
Ceutorhynchus Erysimi, *F.* Local.
„ contractus, *Mm.* Ditto.

Ceutorhynchus Quercus, *F.* Ditto.
„ didymus, *Hbst.* Ditto.
„ sulcicollis, *Gyl.* Portmarnock.
„ subrufus, *Hbst.* Taken by Mr. Tardy.
Tychius picirostris, *F.* Portmarnock.
Rhinonchus Castor, *F.* Local.
„ pericarpius, *F.* Ditto.
„ quadrituberculatus, *F.* Ditto.
„ quadricornis, *Gyl.* Ditto.
Orthochætes setiger, *Germ.* Portmarnock.
Orchestes Quercus, *L.* Local.
„ Alni, *L.* Ditto.
„ Fagi, *L.* Glasnevin Botanic Gardens.
„ Rusci, *Hbst.* Taken by Mr. Tardy.
„ Salicis, *L.* Local.
„ saliceti, *F.* Glasnevin.
„ stigma, *Germ.* Not common.
Balaninus Brassicæ, *F.* Ditto.
„ brunneus, *Mm.* Rare.
Anthonomus Ulmi, *Deg.* Glasnevin Botanic Gardens.
„ pomorum, *L.* Not common.
Hydronomus Alismatis, *F.* Ditto.
Grypidius Equiseti, *F.* Bray Commons, in meadows.
Pachyrhinus leucogaster, *Mm.* Local.
Notaris acridulus, *L.* Ditto.
Erirhinus schirrhosus, *Schön.* Ditto.
Dorytomus Tortrix, *L.* Ditto.
„ pectoralis, *Pz.* Taken by Mr. Tardy.
Hypera punctata, *F.* Dundrum, &c.
„ murina, *F.* Portmarnock.
„ nigrirostris, *F.* Ditto.
„ Plantaginis, *Deg.* Taken by Mr. Tardy.
„ Rumicis, *L.* Ditto.
Ellescus bipunctatus, *L.* Ditto.
„ scanicus, *Pk.* Portmarnock.
Leiosoma ovatula, *Clv.* Not common.
Tanysphyrus Lemnæ, *Pk.* Rathfarnham.
Alophus triguttatus, *F.* Portmarnock.
Barynotus mercurialis, *F.* Frequent.
Merionus elevatus, *Mm.* Ditto.
Merionus obscurus, *F.* Frequent.
Liophlæus nubilus, *F.* Generally distributed.
Otiorhynchus sulcatus, *F.* Local.
„ singularis, *L.* Ditto.
„ rugifrons, *Gyl.* Sandycove.
„ tenebricosus, *Hbst.* Baldoyle, on hedges.
„ atro-apterus, *Deg.* Malahyde and Portmarnock.
„ scabrosus, *Mm.* Near Dundrum.
„ ovatus, *L.* Local.
„ niger, *F.* Ditto.
„ brunnipes, *Ol.* Roebuck, &c.
Trachyphlæus scabriculus, *L.* Taken by Mr. Hardy.
Molytes anglicanus, *Mm.* Portmarnock, rare.
Philopedon geminatus, *F.* Ditto.
Strophosomus Coryli, *Schön.* Local.
Sciaphilus muricatus, *F.* Ditto.
Sitona Regensteinensis, *Hbst.* Ditto.
„ hispidula, *F.* Ditto.
„ lineata, *L.* Common.
„ canina, *Gyl.* Local.
„ grisea, *F.* Ditto.
„ tibialis, *Hbst.* Ditto.
„ lineella, *Bonsd.* Portmarnock.
„ fusca, *Ste.* Baldoyle, &c., abundt.
„ subaurata, *Kby.* Ditto.
Polydrusus flavipes, *Deg.* Glasnevin Botanic Gardens, &c., scarce.
„ micans, *F.* Taken by Mr. Tardy.
„ pterygomales, *Schön.* Upon beech-trees, early in summer.
Nemoicus oblongus, *L.* Local.
Phyllobius uniformis, *Mm.* Ditto.
„ argentatus, *L.* Frequent.
„ calcaratus, *F.* Taken by Mr. Tardy.
Apion Craccæ, *L.* Bray.
„ violaceum, *Kby.* Local.
„ Hydrolapathi, *Kby.* Ditto.
„ frumentarium, *L.* Ditto.
„ radiolus, *Kby.* Ditto.

Apion æneum, *F.* Portmarnock.
„ Carduorum, *Kby.* Local.
„ rufirostre, *F.* Ditto.
„ virens, *Hbst.* Portmarnock, abundant.
„ Kirbii, *Ste.* Phœnix Park.
„ flavipes, *F.* Local.
„ nigritarse, *Kby.* Ditto.
„ apricans, *Hbst.* Not unfrequent.
„ Pisi, *F.* Local.
Apion miniatum, *Schön.* Malahide, &c.
„ subulatum, *Kby.* Not common.
„ vorax, *Hbst.* Ditto.
„ Ervi, *Kby.* Ditto.
„ assimile, *Ste.* Local.
Ramphus flavicornis, *Clv.* Phœnix Park, on hawthorn.
Rhynchites Alliariæ, *Pk.* Taken by Mr. Tardy.
„ Betulæ, *L.* Ditto.

(To be continued).

A. R. Hogan.

Charlton, Dundrum, near Dublin,
January, 1854.

The Cholera Fly. — Something has been said at the meetings of almost every Natural-History Society, on a small fly (*Aphis Rumicis*), which appeared in vast swarms during the past autumn, in those districts of the North of England which have been stricken with that fearful scourge, the cholera. No notice has, I believe, been previously taken of the occurrence of this fly at the time when the cholera has been raging; I therefore think that the following may be interesting. In 1833, when this plague was at its height in Exeter, the very same thing happened. As I was then only just out of my long clothes, my own entomological recollections will not carry me so far; but years and years ago my mother has told me that at that time vast swarms of very minute flies suddenly passed over the city like misty clouds, and darkened the air, even in the brightest sunshine. On these occasions, any meat that might be exposed in the air, became immediately putrid. My mother, on seeing these clouds approach, always ordered the windows to be closed; and by that means, she believed, kept off the cholera from the house. Whether this fly has anything to do with the cause of the disease; whether it always accompanies the malaria without being the direct cause; or whether it be simply an accidental circumstance resulting from the favourable state of the atmosphere at the time for their development, are questions which further observation, or, at any rate, heads wiser than mine must decide. At the same time, I will just observe, that if the fly be the cause of the cholera, the diminution of the disease, which has always taken place during the winter months, would in a great measure be accounted for, since the insects would then be destroyed by the cold; while if, on the contrary, cholera were caused solely by noxious vapours proceeding from insufficient drainage &c., I think that that evil would be rather aggravated than otherwise, at a time when the weight of the atmosphere prevents those gaseous particles from dispersing. Again, can any one say what is the origin of cholera? Alas! they cannot; if they could, we might hope that some remedy would be found. Whatever be its origin, it must be agreed that it is some ingredient of the atmosphere, borne along with greater or less rapidity through whole countries or continents. Wherever cholera breaks out, some foreign nucleus has been imported into the district, the developement of which is of greater or less extent, depending on certain secondary conditions, namely, the absence or presence of damp, cleanliness, efficient drainage, wholesome food, &c. May not that nucleus consist of these minute flies or their eggs? Many circumstances which might be mentioned seem to favour such a supposition.—*Alfred Merle Norman; Clevedon, Somerset, December* 14, 1853.

Proceedings of Natural-History Collectors in Foreign Countries.

Mr. H. W. Bates.* — "Santarem, May 27, 1853.— 1454 Coleoptera and various insects, contained in two boxes; and the imperfect skin of a sloth. The above go down to Parà by the steamer, and I hope will reach you safely. The season was rather peculiar this year, the dry weather having been prolonged to the end of February, and when the rains *did* come, they were incessant till now; therefore the "insectiferous" showery gleamy season has been almost *nil*. However, I applied myself closely and laboriously to the minute Coleoptera, and hope the present collection will be considered a good result of my labours so far. It appears to me that by far the greater portion I have not sent you before, and are probably new to science. There is a wonderful amount of various and curious things in the Staphylini, Geodephaga, Anthici, &c. I have had great difficulty in keeping them free from mould, but find they will require only a little careful brushing to become good specimens. I have gummed them lightly on card, so that purchasers can have no difficulty in taking them off with the point of a moistened hair pencil, and setting them as they wish: as to packing them in pill-boxes, I am sure it wont do in the wet season here, for even when previously dried in trays, they are sure to become a mass of mould in a fortnight in the pill-boxes. Besides, I like better to have them displayed, because I can then note the species, and be guided in collecting, so as not to miss similar-looking things. I see the small Coleoptera are much studied on the continent; there are many almost exclusively "Staphylini-men,"—Erichson, Mannerheim, D'Aubé, &c.; others "Anthici-men,"—Marquis La Ferté, Dr. Schmidt, &c.; others, small Geodephaga,—Chaudoir of Moscow, &c. I have put a number to many species, some of which refer to the notes inclosed; the species having numbers I have selected almost at random, numbering only as many as I have time to bestow on. I want you to give me a list of all the numbered species (or as many as you can), with any information you can get about each, such as the name of the genus if not of the species, whether a favourite group or not, whether new or not.

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* Communicated by Mr. S. Stevens.

"The Upper Amazon steamer has not arrived yet: I rather expect I shall be obliged to go to Parà after all to embark, as it is probable it will not stop here; but I can get no news of the Company's plans: if it stops at the Barra, of course I can go thither in the Barra steamer and tranship. At any rate, there will be time to receive books and papers from England. Odd papers, magazines, &c., which many entomologists circulate amongst their friends, if relating to South-American insects, even if in German, I should esteem much.

"I am very anxious to hear of the safe arrival and profitable sale of the barrel of fishes, &c. I could do more, perhaps, than you expect in London, in fishes, as I believe there are *thousands* of species in these rivers, and those of the brooks and head rivers are different from those of trunk streams: I only want encouragement. There is some difficulty about vessels for them; good barrels are not to be had: but I have a scheme to remedy this. I have got some news of the Lepidosiren at last; the Indians call it "Tambaki-mboya," and I have some friends on the look-out for it: it is only with bow and arrow that they can obtain it, as they say it bites off the hook. I think it likely I may get heads of the Iniæ, or dolphins; yet the Indians have superstitions about them which makes it difficult to get them. All say there are three kinds; I have always seen two, the Bouti and the Tucuxi, the former have some black and the others flesh-colour, and as I have seen these colours go in pairs when they are rolling, they may be two species. The sloth I send was a fine specimen, but most unfortunately, such is the humidity of the weather, it was impossible to dry it quickly enough, and the claws all fell off. In future, I shall treat all thick mammal-skins as Professor Owen recommends in the Admiralty Manual—put them in spirit.

"I think it is necessary that you should request Messrs. S. & Co., when you send parcels, to put them in their manifest; likely enough the lost parcel was seized in Parà for want of this. There is now steam all the way from Southampton to Santarem; you might try this conveyance by sending me the six latest dates of the 'Illustrated London News,' they will reach me in about thirty-five days."

"Santarem, June 26, 1853. — I wrote you when I forwarded a collection on the 10th of March; a second letter on the 29th of March; and a third with the collection on the 27th of May; so, having written so often, I have not at present much to say. The steamer, when it came up, brought me letters from you, which contained the pleasant intelligence of the safe arrival of the Tapajos collection, which had begun to cause me some uneasiness. The collection appears to be considered one of the best, as I had expected. There are many beautiful things still left with me, but only as unique at present, especially in Eurygonæ, &c. The estimation bestowed on my miserable specimens of Economic Botany is very encouraging, and I value Mr. Hanbury's notice and politeness: as to the offer mentioned, I cannot conscientiously say that the prices given are not liberal or sufficient, at the same time, of course, the more encouragement I receive the harder I work, and I have already a few specimens collected since the receipt of the letter. I would rather say, that as my application to this department is dependent on my future stay and further exploration of the country, the present of a periodical, or literary and scientific journal, to make me feel less an exile from intellectual society, would be very acceptable. The journal need not be new, second-hand will do. I would name the 'Art Journal,' or even the 'Illustrated News;' my brother already sends me the 'Athenæum.' When you send me the next parcel of books, I hope the 'Zoologist' will not be forgotten; send all the numbers.

"Considering the value of the Tapajos collection, the non-arrival of the steamer for the Upper Amazons, &c., I shall adopt your advice and make another visit; in fact, I am now preparing. I shall not hire a canoe and hands, indeed the latter is impossible; even the two mulattoes I engaged last time cannot now be had, as one has been in prison for burglary, and the other is at Obydos. I shall make use of some of my friends to give me a lift to Alter do Chao, as the first station. All letters and parcels will reach me safely.

"H. W. Bates."

Occurrence of the Round-headed Porpoise (Phocæna melas) *near Ventnor.*—A specimen of the round-headed porpoise, or caaing whale (*Phocæna melas*, Traill), is now lying on the shore below Hoody Point, about a mile and a half from this place. It was washed ashore on the night of Sunday, the 25th instant; yesterday I proceeded to the spot, and having made a rough sketch, readily identified it as the above species on reference to Professor Bell's work. The following dimensions were obtained with the aid of a walking-stick: — Length, 15 feet 6 inches; depth, 3 feet 8 inches; length of pectoral fin, 3 feet; dorsal ditto, 2 feet 8 inches; width of caudal fin slightly exceeding 3 feet; the circumference might exceed 8 feet. The white mark under the throat was very small, not extending along the breast and belly as described; moreover, the width of the flukes I made 1 inch more than the length of the pectorals, instead of falling short of it. With these exceptions, the description exactly applied. It appeared to be a male, of less than the average size: the blubber, a portion of which had been removed, was about $1\frac{3}{4}$ inch in thickness. I was anxious to carry off a tooth, but though they appeared loose, being provided only with a pen-knife and Adams's forceps, could not effect it.—*George Guyon; Ventnor, Isle of Wight, December* 28, 1853.

Extracts from Letters of JOHN WOLLEY, Esq., *now in Lapland.**

NOTE *on the Habits of the Hawk Owl,* (Surnia ulula).—So little is known respecting the appearance while living, and the habits, of this rare visitor to Great Britain, that I feel sure the following account of it, written from Lapland by Mr. John Wolley, will be interesting to the readers of the 'Zoologist.' It is necessary to observe, that it labours under the disadvantage of not having been originally intended for publication, and also of not having been seen by the writer since I obtained his permission to make the present use of it.

"The hawk owl is not uncommon here. It flies much in the daytime, and with its long tail, short wings, and quick flight, has a very hawk-like appearance in the air, when its large square head is not seen. Its cry near its nest is also similar to a hawk's; and it often sits on the bare top of an old dead fir, to watch intruders, where it seems to have no idea that it can be in danger. It carries itself much after the fashion of the more regular owls; but whilst all the feathers at the back give a great breadth to its full face, there is quite a 'table' at the top of its head. It casts its bright yellow eyes downwards with the true air of half-puzzled wisdom, or turns its head round for a leisurely gaze in another direction; to glance backwards is out of the question, and to look at any one with a single eye much beneath its dignity. I have seen it from my window fly down from its stand and take the mouse it caught back to the tree before it began to eat it; but it shifted its place several times before it found a convenient spot for finishing the meal. I do not know whether it is in the habit of hunting on the wing, but this year mice are so abundant that such exertion would be superfluous. When disabled from flight, it at once 'squares' itself for defence, putting on its most formidable countenance, guarding its back, and presenting its front to the enemy; silently and calmly it maintains its ground, or springs from a short distance on its foe. So, bravely it dies, without a thought of glory, or without a chance of fame, for of its kind there are no cowards.

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* Communicated by Alfred Newton, Esq.

"One day I heard a low noise in the woods which surprised me. I thought it must be the whine of a dog that was very eager after some animal it could not get at; I even guessed it might be a wolf. After a careful stalk I came upon a family of hawk owls, one of which dropped a mouse as I fired. It was in the day-time; they were very little alarmed, and I could have shot them all. I am told that they breed in 'tyllyrs.' I have not found a nest, but shall set up some convenient houses for them this autumn."

"Tyllyrs" are the nest-boxes set up by the Lapps and other inhabitants of the far North for the accommodation of the golden-eyed duck, or rather for their own, as it is a case of "*Sic vos non vobis.*" Is this the species of owl of which Linneus (as may be seen in Yarrell's 'British Birds,' iii. 270) found a couple of young ones hung up *in terrorem*, in consequence of their parents having appropriated a box to themselves?

Egg and Song of the Redwing (Turdus iliacus).—Some time since several very interesting notes respecting the colour of the egg of the redwing appeared in the 'Zoologist' (Zool. 2141, 2948, 2983, 2984), and all but conclusive evidence was then adduced by Mr. Wilmot and Mr. John Wolley; in case, however, any one should still entertain a lingering doubt as to its true character, I beg to record, for their complete satisfaction, that I am informed by my friend, the gentleman last named, that on May 23rd, 1853, he shot a redwing near Umea, in the North of Sweden, containing an egg, perfect, and ready for exclusion; and that this egg, which (together with all the others collected by him last year in Scandinavia) is now in my keeping, closely resembles those which collectors have been accustomed to receive from Mr. Procter, and other trustworthy sources: that is to say, it is of the same character as eggs of the blackbird, and is in no way like ordinary varieties of eggs of the song thrush. In addition to those particulars respecting the nidification of the redwing furnished to the new edition of Mr. Hewitson's 'Eggs of British Birds,' Mr. Wolley tells me he is assured that it does not breed near Stockholm, or in the southern or central parts of Sweden; and hence the difficulty there has hitherto been in procuring its eggs from that country. He goes on to say:—

"When they have young, the old redwings are bold, flying suddenly towards the face of an intruder with an angry note, something like that of the blackbird, snapping their beaks, and then wheeling rapidly out of sight. At other times, they use the same note as they fly from tree to tree round the nest, but they keep out of sight as much as possible. As she sits on her eggs, the white stripe over the eye of the redwing is very conspicuous. Like other birds of the kind, she has so deep a cup to hold her that the rim of it necessarily chucks her under the chin, and makes her beak point upwards.

"The redwing and the redstart sing here [Tornea Lapmark] all night; the redwing incessantly, night and day, without any variation. A string of three or four notes—*tut-tut-tut*—in a regular descending scale, and then a little inward twittering or warbling, the former at about the ordinary pitch of the voice of the song thrush (whose music, by the way, is infinitely superior), but the last part so faint and feeble as scarcely to amount to a whisper, and only to be heard at a short distance. For a long time I was not aware of the existence of this inward melody: perhaps the twittering of a swallow on the house-top may give some little idea of it. The *tut*, *tut*, *tut* is repeated so constantly and regularly as to be quite tiresome, the rest seldom reaches the ear; nevertheless, these loud clear notes, followed at the end of the next interval by the suppressed scarcely distinguishable twitterings, make a very striking wood-sound. I much question whether it is ever to be heard in perfection before the bird leaves our islands. The inward kind of song I think I have heard up here very late in the year, but unpreceded by the bold open notes, and unfollowed by a repetition of them after a very short rest, as in the perfect spring song, which I heard for the last time this year about July 27th."

It is plain that Mr. Wolley does not think that this bird is entitled to the name of "Swedish nightingale;" I have therefore given the above long though interesting extracts from his correspondence.

ALFRED NEWTON.

Elvedon, Thetford, January 6, 1854.

PROCEEDINGS OF SOCIETIES.

ENTOMOLOGICAL SOCIETY.

January 2, 1854.—EDWARD NEWMAN, Esq., President, in the chair.

Donations to the Library and Museum.

The following donations were announced, and thanks ordered to be given to the donors:—The 'Zoologist' for January; by the Editor. The 'Athenæum' for December;

by the Editor. The 'Literary Gazette' for December; by the Editor. The 'Journal of the Society of Arts,' for December; by the Society. Hewitson's 'Exotic Butterflies,' Part 9; by W. W. Saunders, Esq. 'Verhandlungen des zoologisch-botanisch Vereins in Wein,' 1 Band. Wein, 1852; by the Society. 'Entomologische Zeitung,' October to December, 1853, and for 1853, complete. 'Linnea Entomologica,' viii. Band. Berlin. 1853. 'Beitrage zur nähern Kenntniss von Periplaneta (Blatta) orientalis, *Linné;*' von C. Cornelius; Elberfeld; all by the Entomological Society of Stettin. 'Report of the Council of the Art Union of London for 1853,' and 'Almanac for 1854;' by the Art Union. Two pairs of Lælia cœnosa; by Mr. Foxcroft. Fifty specimens of butterflies; by T. J. Stevens, Esq., Bogota, Corr. M. E. S. A box of British Micro-Lepidoptera; by P. H. Vaughan, Esq.

Death of Mr. Thomas Whitfield.

It was announced that Mr. Thomas Whitfield, well known as a zoological collector in Africa, and whose exertions, during thirty years, added many rare animals to the collection of the late Earl of Derby, the British Museum, &c., died in London, on the 25th of December last.

Election of a Subscriber.

Miss S. Thompson, Barn Hill, near Stamford, was elected a Subscriber to the Society.

Exhibitions.

Mr. S. Stevens exhibited some butterflies received by him from Mr. T. J. Stevens, of Bogota, among them a couple of the rare and beautiful Morpho Ganymede, *Westwood,* (M. Sulskowskii, *Kollar*). One of them being quite spoiled by grease when it arrived, was immersed for twenty-four hours in camphine, and then magnesia having been applied, it was restored to its original brilliancy, so that no one could tell which of the two had been greasy. He also exhibited a few butterflies from Manilla, whence very few are obtained in this country.

Method of taking Honey from Beehives in China.

Mr. Westwood handed the following extract from the 'Gardener's Chronicle,' to which journal it was communicated by Mr. R. Fortune :—

"I am staying at present (August 16th) in a Buddhist temple, situated in a most romantic and beautiful spot amongst the tea-hills in the province of Chekiang. Some of the priests in this temple are fond of bees, or it may be they are fonder of the honey, and keep a number of hives. The Chinese hive is a very rude affair, and a very different looking thing from those we are accustomed to use in England, and yet I suspect were the bees consulted in the matter they would prefer the Chinese one to ours. It consists of a rough box, sometimes square and sometimes cylindrical, with a movable top and bottom. When the bees are put into a hive of this description it is rarely placed on or near the ground, as with us, but is raised eight or ten feet, and generally fixed under the projecting roof of a house or out-building. No doubt the Chinese have remarked the partiality which the insects have for places of this kind when they choose quarters for themselves, and have taken a lesson from this circumstance. My landlord, who has a number of hives, having determined one day to take some honey from two of them, a half-witted priest who is famous for his prowess in such matters was sent for to perform the operation. This man, in addition to his priestly duties, has the charge of the buffaloes which are kept on the farm attached to the temple. He came round in high glee, evidently considering his qualification of no ordinary kind for the operation he was about to perform. Curious to witness his method of proceeding with the business, I left some work with which I was busy, and followed him and the other priests and servants of the establishment to the place where the hives were fixed. The form of the hives, in this instance, was cylindrical, each was about three feet in height, and rather wider at the bottom than the top. When we reached the spot where the hives were placed, our operator jumped upon a table placed there for the purpose, and gently lifted down one of the hives and placed it on its side on the table. He then took the movable top off, and the honeycomb, with which the hive was quite full, was exposed to our view. In the meantime an old priest having brought a large basin, and everything being ready, our friend commences to cut out the honey-comb with a knife made apparently for the purpose, and having the handle almost at right angles with the blade. Having taken out about one-third of the contents of the hive, the top was put on again, and the hive elevated to its former position. The same operation was repeated with the second hive, and in a manner quite as satisfactory. But it may be asked, 'Where were the bees all this time?'—and this is the most curious part of my story. They had not been killed by the fumes of brimstone, for it is contrary to the doctrines of the Buddhist creed to take away animal life—nor had they been stupefied with a fungus, which is sometimes done at home, but they were flying about above our heads in great numbers, and yet, although we were not protected in the slightest degree, not one of us was stung; and this was the more remarkable as the bodies of the operator and servants were completely naked from the middle upwards. The charm was a simple one:—it lay in a few dry stems and leaves of a species of Artemisia which grows wild on these hills, and which is largely used to drive that pest the mosquito out of the dwellings of the people. This plant is cut early in summer, sun-dried, then twisted into bands, and it is ready for use. At the commencement of the operation I am describing, one end of the substance was ignited and kept burning slowly as the work went on. The poor bees did not seem to know what to make of it. They were perfectly good-tempered and kept hovering about our heads, but apparently quite incapable of doing us the slightest injury. When the hives were properly fixed in their places, the charm was put out, and my host and his servants carried off the honey in triumph. 'Come,' said he to the operator and us who were lookers on, 'come and drink wine.' 'Aye,' said the half-witted priest, 'drink wine, drink wine;' so we all adjourned to the refectory, where wine in small cups was set before us."

Mr. Curtis suggested that it might be worth trying if any of our English species of Artemisia would have the same effect as the Chinese.

Mr. Westwood said that a neighbour of his had turned up his hives and taken out the honey he required, smoking a cigar during the operation, without suffering any injury from the bees; but he himself had deprived hives of their honey with perfect safety, simply by drumming the bees into an empty hive, without any smoking.

Habits of Panurgus ursinus.

Mr. Curtis communicated the following note on Panurgus ursinus:—

"I wish to record the habits of this bee, which I observed during a visit to Tunbridge Wells.

"On the 13th of July I saw considerable numbers flying over a foot-path by the side of a heath, many of them were burrowing in the earth, and others were paired over the holes they had formed. On the 24th I again visited the same locality, when I found the females curling themselves up in the flowers of a Hieracium? the males flying around them. At the same time scores of the males were entering the holes in the foot-path, and occasionally I saw at the entrance a male rolling over with a female in the dust, in the act, I suppose, of copulation. In 1826, when I illustrated this genus in the 'British Entomology,' the species were considered rare; I had, however, found P. ursinus not uncommon on Shooter's Hill, in August, 1819; and P. lobatus I detected in abundance at Black Gang Chine, Wallpan Chine, and Ventnor, in the flowers of a hawk-weed, from the end of July to the middle of August, 1826; and Mr. Smith also has lately found it in the Isle of Wight.

"I regret that I could not, from the hardness of the foot-path and for want of a proper instrument, investigate the burrows, apparently formed by these bees, and I am quite unacquainted with their metamorphoses."

Small Lepidoptera of the Amazon.

The Secretary read the following extract from a letter addressed to him by Mr. T. J. Stevens of Bogota:—"Respecting small Lepidoptera, there are a great many in this hot country, at least nocturnal ones, for as soon as the candles are lighted they enter into the houses; but in most parts the mosquitoes enter at the same time, and it would require a thorough-bred entomologist to collect moths under their auspices."

Papers read.

The following papers were read:—"Descriptions of some new Species of Butterflies from South America;" by W. C. Hewitson, Esq. The first part of a "Monograph of the Chrysomelidæ of Australia;" by J. S. Baly, Esq. "Some Observations on the Excrement of Insects, in a letter addressed to William Spence, Esq., F. R. S., &c.;" by John Davy, M.D., F. R. S., Inspector-General of Army Hospitals. In this paper the author records the result of many investigations into the chemical constituents of the excrement of insects of several Orders, both in the larva and adult states, remarking upon the importance of the subject with reference to the vast number and diffusion of insects, and the effect their excrement, consisting as it does of matter most powerfully stimulant to vegetable life, must have in the economy of Nature.

New Part of 'Transactions of the Entomological Society.'

A new part of the 'Transactions' was announced as ready for distribution.—*J. W. D.*

ROYAL SOCIETY OF EDINBURGH.

December, 1853.—SIR THOMAS BRISBANE, President, in the chair.

There was a large attendance of scientific men—most of the Professors of the University, and others devoted to the study of physical science in Edinburgh, being present. The following papers were read:—

The Torbanehill "Mineral."

The chief business of the evening was a paper by Professor Traill, on the substance which has recently acquired extensive notoriety in legal and scientific circles throughout Europe, as the Torbanehill "mineral," previously known, it is said, as the Boghead gas coal. The President having called upon Professor Traill to read his paper, he proceeded to give a detailed account of the local situation and geological position of the mineral in question; but these did not seem to supply any evidence as to the true nature of the substance. There could be no doubt but that it occurred in a coal formation, although he considered this as no argument in favour of its being coal, as many other minerals are found under exactly similar conditions. He then gave a description of the substance, dwelling particularly upon those points which seemed to distinguish it from household coal and cannel coals; in its colour it was stated to differ, as well as in its scratch changing colour and not being lustrous. Its thin edge, when held betwixt the eye and a candle-flame, was shown to transmit light. It also possessed very considerable elasticity, causing the hammer to rebound, and differed in its fracture from ordinary coals. Specimens were handed round the room to illustrate the various statements made by the learned Professor, who also threw a block of the substance into the fire, to show that it did not burn like ordinary coal, but produced a bright flame, never going into a red heat, such as would render it suitable for the cooking of meat and other culinary operations. He also lighted a piece of it at a candle, showing that it burned freely in this way, with a bright flame, and produced a large quantity of smoke, the carbonaceous matter being deposited in part upon the piece itself. Organic structure had been traced in the substance, but he did not deem this of much importance. His various researches led him to the conclusion that it was not a coal, nor a parrot-coal, nor asphaltum, nor a bituminous shale, to which it nearly approached, but a distinct *mineral*, for which he proposed what he considered to be the most appropriate name—BITUMENITE. Professor Traill stated that this opinion had been long formed, that the mineral had been brought to him long before the celebrated trial, and that he at once recognized it as a mineral new to him and to science. We of course do not enter into the details of the appearances and peculiarities presented by the substance, as they could not be interesting to the majority of our readers; and those who, either from commercial or scientific motives, desire to acquaint themselves with the elaborate details of Dr. Traill's paper, will no doubt have an opportunity of doing so in the 'Transactions of the Royal Society,' at the close of the present session.

The President called for the opinions of members.

Professor Gregory, in remarking upon the paper, stated that he did not consider the substance in question similar to a bituminous shale, as the bitumen could not be extracted from it by any solvent with which he was acquainted. He did not see any chemical evidence for regarding it as differing from coal.

Professor Fleming, in the most spirited speech we have heard from him for a long time, contended that the substance, which he preferred to call the "Boghead gas coal," was a coal, and a candle coal. What is a candle coal? asked he, and why does it get that name? Because it burns like a candle, which *this* substance does; and what is a parrot-coal, and why does it get that name? Because in burning it makes a noise, "chatters like a parrot," and the block burned in the Royal Society's grate demonstrated that the so-called mineral did the same. He argued that Professor Traill had pointed out no characters of sufficient value whereby to distinguish his mineral; mineralogists did not depend upon mere external characters now-a-days (Professor Traill—"They never did"), and the characters pointed out by the author of the paper did not involve differences of kind, but merely of degree. [In an after speech this was denied by Professor Traill, and he seemed to lay great stress on the external characters, which were of great practical value in distinguishing minerals, iron and copper pyrites, for example; and the only difference between the charcoal and the diamond was a difference in hardness, for their chemical composition was the same]. But Dr. Fleming, instead of acknowledging Dr. Traill's new mineral, *Bitumenite*, did not consider it a mineral at all. It was not formed of certain elements in certain proportions, but varied much in different specimens; and from these and other considerations, it was not a mineral, but a *rock*, and it did not differ more from coal than the Craigleith sandstone did from the Hailes sandstone, or the Redhall did from the Granton, or the sandstone of Salisbury Crags did from all four. In the same way, the mountain limestone of different districts presented differences equally marked with those which distinguished the Boghead gas coal from other kinds of coal. With respect to structure, he had seen specimens of fossil wood wherein the slightest trace of organic structure could not be detected under the microscope.

Professor Bennet had devoted much attention to the microscopical characters of the different coals, and wished to give his opinion merely on this point. He exhibited drawings, from the microscope, of true coal, and the substance in question. The latter exhibited markings, which he believed were regarded by the botanists engaged in the inquiry as cells. Now, they wanted the character of cells. Hugo von Mohl had shown the vegetable cell to be of the following anatomical structure:—It consisted of, 1, a central nucleus; 2, a primordial utricle; 3, a proper cell-wall; with also included granules. Now, these appearances he could not find in any specimens of the substance submitted by him to the microscope. It was of great importance, he considered, to determine whether the markings shown in his drawing were cells or not, because the whole question hinged upon it, and if they were cells, then this substance showed a structure so profuse in cells as to be unparalleled in any other instance of coal.

Dr. Greville had been called upon to examine the substance carefully, and stated that although the markings in the drawing looked very like cells, still he was not prepared to say that they were cells in their normal condition. They might have been once cells, and become altered, but, at any rate, the substance seemed to have a vegetable basis.

Professor Balfour entered at length upon the question in its botanical bearings. There could be no doubt but that organic structure, both vascular and cellular, occurred in the disputed substance. He alluded to the opinions of Quekett and others who had examined it with this view, and thought that it was wrong to draw any argument against the substance being coal, from the fact that the structure seen was not of a certain kind; coal might be formed of coniferous wood, in other cases it might not. We know well that various plants differing from the Coniferæ—the Stigmarias and others—occurred in the coal formations, and it was but reasonable to suppose that these contributed to the coal deposits, as well as the Coniferæ. It was impossible, therefore, to set limits to the kind of structure to be found. As for finding the nuclei and primordial utricles of cells, we could not expect that. With regard to the general appearance of the substance, he also made some observations, and stated that, so far from the Torbanehill mineral being well distinguished in this respect from some kinds of coal, he had placed specimens of it and of certain kinds of coal, side by side, before a very competent authority, who could not decide which was the one and which the other. On the whole, therefore, he was satisfied that it was vain to attempt to draw any distinction between the Torbanehill substance and coal.

The Blind Animals of the Mammoth Cave at Kentucky.

Read "A Notice of the Blind Animals which inhabit the Mammoth Cave of Kentucky." By JAMES WILSON, Esq.

The cave in question was described as of great extent, and remarkable in several respects. Although described as a "cave," it consists of innumerable extensive underground galleries, the sides and tops of which consist of limestone. The temperature of the cave is uniformly 59° Fahrenheit throughout the whole year, and a remarkable phenomenon is shown by the variation of temperature outside. When the temperature outside is higher than that of the cave, then an outward current of air is observed, its violence being proportionate to the difference of temperature. On the other hand, when the outer air falls below 59°, then a reverse current sets in. In some cases these currents are so strong as to extinguish the lamps carried by explorers. No change of temperature has, however, been on any occasion observed in the cave, a proof of its vast extent. It is completely dark, but inhabited by some animals. These inhabitants are, in most cases that have been observed, completely blind, some indeed having the rudiments of eyes, and others the eyes to *appearance* pretty well developed, but useless for the purposes of vision. Specimens of the animals were handed round, and the author of the paper detailed their characteristics and habits, as well as of all other remarkable animals in other parts of the world that are known to be without the power of vision. As blind inhabitants of the Kentucky cave, he noticed two bats, two fishes, several beetles, two rats,—one found at a distance of seven miles from daylight, some spiders, moles, Crustacea, and other animals, including the minute Infusoria, which last not being furnished with eyes in those species that live in light, were not to be expected to possess them in those that live in darkness. He alluded to the blind mole of the Cape, and also to the blind mole of Greece, which is the common mole there, and the mole of Aristotle. Aristotle was therefore correct in describing *the mole* as blind, and his correctors and commentators wrong who found eyes in the British mole, which is a different animal, possessed of the faculty of vision. He also noticed a blind reptile. The inquiry as to the origin of those remarkable beings that inhabit the Kentucky cave is full of interest. Whether their origin is coeval with the cave itself we cannot tell; it may be that they were created for the remarkable conditions which it affords. But it is also possible that they may represent unfortunate animals that had ages ago wandered into the dark recesses of the cave, and in the total absence of light, and consequent disuse of their visual organs, these organs may have become obliterated, or where their forms remain, they may have become incapable of performing their functions. In such an inquiry, the author remarked, that, like the animals themselves, we grope in the dark.

DUBLIN NATURAL HISTORY SOCIETY.

December 9, 1853.—CHARLES FARRAN, Esq., M. D., in the chair.

Donations.

Mr. Kinhahan begged to present to the Society from Dr. Corrigan a fine specimen of the spiny cross-fish (*Uraster glacialis*), also Muller's topknot (*Rhombus hirtus*), both taken in Dalkey Sound; and from himself the reddish gray bat (*Vespertilio Nattereri*), captured in the county of Kildare. As Mr. Kinahan's paper would be chiefly with reference to this bat, he would not now offer remarks upon it.

Natterer's Bat.

Mr. Kinahan read a paper on the occurrence of Natterer's bat in the county Kildare; the substance of which appeared in the 'Zoologist' for September last, (Zool. p. 4012.)

List of Irish Mammals.

Mr. Kinahan made the following remarks on the Mammals of several parts of Ireland:—

"I beg to lay before you a local list of the distribution of the Mammalia of part of Carlow, Kildare, and Queen's County, for which I am indebted to the kindness of the same gentleman who gave me the bats,—F. Haughton, Esq. Pipistrelle—common; one, captured in 1853, in company with the next at Levitstown, county Kildare. Natterer's bat, nine captured June, 1853, in Tankardstown-bridge, near Levitstown, county Kildare—common, though perhaps local. Hedgehog—common. Badger—Kilmarony woods, Queen's County, rare. Otters, river Barrow—very common. Stoat—very common. Common fox—very common. Long-tailed field mouse—common; Levitstown. Common mouse—very common. Black rat—Carlow; single specimen killed. Norway rat—common everywhere. Common marten—very rare; last seen about ten years since at Bestfield, Carlow. A skin obtained at Mount Leinster, county Carlow, eighteen years since, was sent to the late Mr. Vigors by T. Haughton, Esq. Irish, or varying hare—rather rare; Oakpark. Rabbit—common. Common squirrel—very rare; existed formerly in Pollerton, county Carlow, and said still to be found in Burton Hall woods. This list, though containing but few rarities, is of importance, as all authentic local lists are valuable. It contains but four rare animals. The squirrel, concerning which many doubt its ever having been indigenous; it is said in Nulty's 'History of Dublin,' to have been found in Luttrelstown woods, near this city; and there is a tradition that they used to be found near Clondalkin. The other three rarities are—the marten, the black rat, and the badger, all of which, from various causes, are becoming more and more rare in this country. There is one remarkable omission in the list, the long-eared bat, which we might have expected to find. I made, myself, particular inquiries about it, and could get no tidings of it, so I suppose it does not exist here."

Mr. Williams and Mr. Montgomery said that they were of opinion that in the more remote districts those animals were still frequent. The badger, Mr. Williams observed, was constantly met with in parts of Kerry; and Mr. Montgomery stated that in Mayo and Donegal neither the badger nor marten was scarce.

Mr. Andrews said he could confirm Mr. Williams's statement that the badger was not uncommon in parts of Kerry. In some of the lonely recesses of the natural woods the marten was very frequent, and did much damage in destroying the young of the game-birds of the country. Mr. Andrews had every reason to believe that the true wild cat was at one time well known in the Fiadhghleanna, or wild glens of the western parts of Kerry, for the description he got of it was totally different from that of the marten. The marten was called in Kerry "cat crann" (cat of the wood), and the wild cat known as the "cat fiadhachd" (hunting cat). The black rat some years since was very plentiful at a farm near Ballynunnery, county Carlow.

Occurrence of the Membranaceous Duck in Ireland.

Mr. Andrews made the following observations on this recent addition to the Ornithology of Great Britain: —

"This handsome species of duck was shot in the month of February, on the east side of Inch Island, Dingle Bay, in Castlemaine harbour, by a person who was in the habit of looking for water-fowl. There had been previously severe gales from the south-west, and he had noticed some birds which he considered were teal or the small brown wigeon. A flock of six birds were feeding in a muddy creek, at low water, and firing among them, the present specimen was the only one shot. He preserved the bird for Mr. Ross Townsend, the chief officer of coast guard, stationed at Cromane, Castlemaine harbour, who is well experienced, and has long been familiar with the varieties of water-fowl visiting that coast. Mr. Townsend at once saw that it was a species perfectly new to him, and he very kindly forwarded it to me in June last. After a most careful examination, I could not identify it with any of the described birds of Europe or of America; but fortunately having had the opportunity of visiting the British Museum in August, I readily recognised it as the membranaceous duck (*Malacorhynchus membranaceus*) of South Australia. Two specimens are labelled as having been sent home and presented by his Excellency Captain G. Grey, from South Australia, and are by no means a common species. On further inquiries, Mr. Townsend informs me that numerous small flocks of teal were occasionally seen feeding in the same locality, and that the person who shot the bird imagined the flock to be teal, and was therefore not led to examine them more carefully; but the impression made was, that they were all the same. After being fired at they flew to the eastward, in Castlemaine harbour. It is not probable that a solitary stranger, among a flock either of teal or of wigeon, would be the victim. The generic name, Malacorhynchus, appears to have been established by Swainson, the bill being similar to that of the Chauliodus, or common gadwall, but having the substance soft, the tips of the upper mandible on each side being furnished with a loose angular skin or membrane—the finely pectinated laminæ of the upper mandible are like those of the shoveller (*Anas clypeata*), prolonged beyond the margins. These singular membranaceous appendages to the mandibles give it the specific name. There appears to me some confusion in the adoption of generic names, as the Chauliodus of Swainson, for the gadwall, adopted by Selby and other authors, already formed the genus Chauliodus of Schneider, followed by Cuvier, in the Ichthyology of his 'Animal Kingdom.' The Chauliodus belongs to the Esocidæ—pike family; Chauliodus being the only species known of that fish, and never taken except at Gibraltar. This small duck, the Malacorhynchus membranaceus, now recorded as visiting this country, has hitherto not been known out of Australia. It is termed 'Wrongi,' in New South Wales, and is by no means of common occurrence. The colonists of Swan River call it the pink-eyed duck, from an oblong mark of rose pink being immediately beneath the dark patch surrounding each eye; the irides are a dark reddish brown, and the tarsi a yellowish brown. It is remarkable in having the neck, breast, and all the under parts crossed by numerous dark brown fasciæ. The sexes are similar in plumage, the male being only distinguished by being of larger size. This beautiful barring of the neck and breast is peculiar to some of the Natatores, and strikingly seen in the Magellanic goose (*Chloephaga Magellanica*), the Antarctic goose (*Bernicla Antarctica*), and also the ashy-headed goose of the Falkland Islands (*Chloephaga inornata*). In the southern latitudes of Australia the membranaceous duck frequents the fresh-water lagoons in company with the green-necked duck and the New Holland shoveller (*Spathulea rhynchotis*), the shovel-nose duck of the colonists. The latter is closely assimilated to the Spathulea of Europe. Another beautiful little species, Malacorhynchus Fosterorum, frequents the mountain streams of the interior. It is the 'Wiho' of New Zealand, being a pretty black duck with a white bill, and singular for its shrill whistle. As I have before mentioned, the specimens of the membranaceous duck in the British Museum were sent home by Governor Captain Grey, whose extensive knowledge of Australia will afford ample means of obtaining most valuable records of the productions of that country. Captain Grey, late of the 83d Regiment (now Sir Charles Grey), was appointed by Lord John Russell, when Secretary of State for the Colonies, to succeed Lieut.-Colonel Gawler, from the great talents he possessed and his arduous pursuit of knowledge."

Various Birds observed in Ireland.

Mr. Montgomery exhibited specimens of the great cinereous shrike (*Lanius excubitor*) and the black-capped warbler (*Motacilla atricapilla*), both shot by him in Beaulieu Wood, county of Louth. The latter, though not uncommon, was the first time he had met with it in that county. The shrike or butcher bird, was the fifteenth record in Ireland; and he would mention a singular circumstance relative to this bird. On the continent, in Germany and Holland, from the antipathy of this bird to the hawk tribe, the falconers use it for the purpose of capturing those birds of prey. In Holland the method was, when the falcons or hawks passed over the great heaths, the falconers placed a shrike, secured between three pieces of turf. On the appearance of a hawk, even at a great distance, the shrike commenced a violent screaming, which attracted the hawk to the spot. The falconer, in the meantime, had a live pigeon as a decoy; the hawk, in pouncing, was secured, the pigeon being drawn within a net set for the purpose.

Mr. Andrews said that with reference to the communication from Mrs. Blackburn, she further mentions that a turnstone with four young ones, unable to fly, were taken last June on the shore of Valencia, near the old revenue station. An attempt was made to rear the young, but it failed.

Election of Members.

The ballot having been announced, Walter Lindsay, Esq., of Rathmines, and William Compton Domville, of Santry House, were duly elected members.

The Society then adjourned to January.

January 17, 1854.—Robert Callwell. Esq., M. R. I. A., in the chair.

Donations.

Presented by James R. Dombrain, Esq., two handsome specimens, male and female, of the red or common squirrel (*Sciurus vulgaris*), which were shot at Avonmore, county of Wicklow; and by the same gentleman, a specimen of the godwit. Mr. Dombrain obtained this bird from a fisherman at the Pigeon-house, who found it nearly drowned, having taken one of the hooks.

Mr. Ffennel observed that the squirrel was not uncommon in many parts of Ireland; at Lough Inagh, in Connemara, it was very numerous.

Mr. Kinahan pesented two specimens of the wood-mouse, or long-tailed field-mouse (*Mus sylvaticus*), male and female; and Mr. R. P. Williams presented a specimen ot the black scoter duck (*Oidemia nigra*), shot near Sallins.

Adventitious Roots of Jussiæa grandiflora.

Professor Allman made some observations on a peculiarity of the adventitious roots of Jussiæa grandiflora, growing in the College Botanic Garden, (Phytol. v. 60).

Harbour Fish and the formation of Piscinæ.

Mr. Andrews made some "Remarks on Harbour Fish and on the formation of Piscinæ." He said—"I had some time since proposed to give a paper with referencc to the harbour fish of the south-west coast of this country, viz., of such as were permanent residents in our harbours and estuaries, and of such as visited the harbours during the seasons of spawning. I found, however, from my notes, that it would be a subject of such magnitude that the interest and importance would ill be conveyed within the limits of a paper which the rules of our evening meetings prescribe. In this statement I shall as briefly as possible remark on some of the peculiarities and habits of those fish that are easily obtainable in our harbours throughout the seasons, for the object, not at the present of treating on their economical uses, but of creating an interest in a physiological point of view, by observing in those large glass cisterns or tanks, which may be termed 'piscinæ,' the habits, the modes of progression, and the seeking of food which influence marine animals. Most are aware of the great pleasure generally afforded to the visitors during the last year at the Zoological Gardens, London, in the examination of the numerous marine and fresh-water fishes, and of the Chelonia, or tortoises, which were seen in the full beauty and spirit of life in the large crystal cisterns and troughs. In the following I shall allude principally to the smaller kinds, chiefly marine, that would form objects of interest in their investigation, and in many instances may lead to views entirely new, as the absence hitherto of such facilities have led to decisions, and put forward in ichthyological works, too, at variance with physiological facts." Mr. Andrews then went through the classifications of the several genera of our marine fish, and said that among the Percidæ, or family of perches, the greater and lesser weevers (*Trachinus draco*, and *T. vipera*), were singular in their habits. The latter is most frequently met in sandy inlets, and I have in several cases witnessed the severe effects of its wound. It is well known in Kerry as the sting-fish, and it is surprising that some works on ichthyology still represent the injury to be caused by the dorsal spine; but my friend Dr. Allman has clearly proved the action to be from the strong opercular spine. It is a pretty fish, streaked with brown and yellow, and with a silvery abdomen; having its eyes fixed upwards, like the gobies, it settles in the sand watching the approach of its prey. A few specimens of T. draco have been met with in Ventry harbour. Of the same family the striped red mullet (*Mullus surmuletus*) is of most remarkable beauty in its living state, its scales being of a brilliant red passing into a silvery pink on the belly. In confinement it timidly moves about, waving its barbels to and fro, as organs of touch. It is frequently taken in the herring-nets at the entrance of Ventry harbour, and is probably by no means uncommon there, and when taken from the nets exhibits great brilliancy of colouring. Its scales are easily rubbed from the body, so that those seen in the fish-shops in London, are rarely good specimens, the scales being all detached by the working of the trawl net they are taken in. The basse, or sea perch (*Labrax lupus*), is plentiful at seasons in Brandon Creek, and like several of our marine fish, thrives well, kept permanently in fresh water. Under the head of the mailed cheeks, or gurnard family, are the several species of bull-heads, such as Cottus scorpius, and C. bubalis, which are most amusing when captured. Some give a slight hissing sound, and make their formidable spines very prominent by the inflation of the head. Nothing can equal the extreme beauty of the Cottus Grœnlandicus, or Greenland bull-heads, fine specimens of which were taken in Dingle harbour—the richest tints of carmine, and deep maroon, with spots and barrings of most vivid brilliancy, characterize these beautiful fish in the state of life. The ova, or roe, is different from that of the other species, being of a fine scarlet, and which was remarkable in the species I dissected. The natives of Greenland are fond of this fish, and even eat the roe in a raw state. The pogge, or armed bull-head, is very frequent in the harbours and small inlets of the west coast. The action of this little fish, and the singularly recurved spines of the snout, must render an observation of its habits of interest. Of the sticklebacks, the ten-spined and the fifteen-spined frequent the harbours, particularly the latter—Gasterosteus spinachia—in great numbers in Dingle harbour. They are taken in the sean, and I have admired their playfulness and extreme beauty when placed in a tub of water. Except in anger or alarm they do not exhibit their spines, which lie closely adpressed to the dorsal ridge, in a sulcated groove. They are interesting in their movements in seeking and attacking their prey amid the tangled masses of Fucus serratus and Confervæ, and among which they form their nests and deposit their eggs; they unshyingly, almost immediately after capture, seize the food offered. Passing over many species and families, which are altogether deep-water fish, the next presents the riband-shaped form—the Tænioidæ—in which is the beautiful Cepola rubescens, red-band fish, which assumes the richest carmine to a pale rose-tint. It has frequently been taken on the west coast, and sometimes cast ashore among sea-weeds after a gale of wind. It is met with at low spring tides among the stems of Laminaria and the stronger Fuci. It would form a beautiful object in one of the crystal cisterns, and to observe its sinuously-gliding motions between the stems of sea plants, its eyes large in proportion to its head, directed in pursuit of the soft molluscous animals upon which it preys. Through the kindness of Dr. Farren I obtained a specimen from the south coast. Of the Mugilidæ, the mullets are among the most lively and playful of our harbour fish. The gray mullet (*Mugil capito*), is in great numbers in Ventry harbour, and of large size. Every water seems suited to their growth—salt, brackish, and fresh, and they are easily fed. The atherine or sand-smelt (*Atherina presbyter*), is in abundance in Dingle harbour, and frequents sandy inlets in the winter and spring months in great numbers, at which seasons they are in prime state for the table. They are in Dingle harbour all through the year, but in spring approach the shore to spawn. It is different from the true smelt (*Osmerus eperlanus*), which belongs to the Salmonidæ, or trout family. The next contains a great many pretty species among the Gobiidæ, or the gobies. Of these the blennies are remarkable—the viviparous blenny possesses much of interest in its examination. The spotted gunnell (*Gunnellus guttatus*), is very numerous in Dingle harbour, and called the butter-fish, from the unctuous feel of the body. It is every tint of rich brown, yellow, and purple, and the large dark spots in some specimens are very conspicuous along the line of the dorsal fin. Young specimens of the sea-wolf (*Anarrhicus Lupus*), have been taken in Dingle harbour, and a large specimen in the bay, remarkable for its hideous head and powerful jaws. The black goby (*Gobius niger*), beautiful in the spawning seasons with the deeper shades it assumes, and the rich orange tints of its dorsal fins, is plentiful in Dingle harbour; and also the spotted, the one-spotted, and the double-spotted gobies have all been taken in Dingle and Ventry harbours, and also in deep water in the bay. In Ventry harbour I met with a very beautiful species, presumed to be the Gobius reticulatus, peculiar to the Mediterranean, and distinguished by the rich rosy tints of its dorsal fins. In a calm and sunny day in the month of August, and in a little sheltered inlet in Sneem harbour, I watched for some time the movements of multitudes of gobies. I was surprised at the numbers of the black goby, which occupied, with their young, a muddy recess between rocks, from which they occasionally darted, seizing and returning with their prey. The shanny (*Pholis lævis*), was more exposed, and in sandy grounds; they occasionally rose to the surface perpendicularly with the aid of the pectoral fins, and with the aid of the same movement appeared singularly to raise themselves, or creep up the face of any perpendicular rock or stone. Both these species had numerous young, which they seemed carefully to protect. The speckled gobies were in clear, sandy, and sunny spots, and the two-spotted goby remained near the surface perfectly motionless. Of the dragonets, the gemmeous (*Callionymus Lyra*), is beautiful in the living state, richly marked, and the transparent beauty of its dorsal fins is singularly delicate. It is only obtainable in the trawl in deep water, for I have only met in the harbour the sordid dragonet (*C. dracunculus*), which possesses no beauty. The family of wrasses, or Labridæ, vie with all others in the brilliancy and gaudiness of their colours. Of these I have obtained Labrus maculatus, L. lineatus, and L. variegatus, and beautiful specimens of the three-spotted wrasse (*L. trimaculatus*), in Valencia harbour—its colour most brilliant rose and reddish orange. In the sean, in Dingle harbour, I have taken the Comber wrasse (*L. Comber*), and a beautiful little wrasse marked with a lateral band similar to the rainbow wrasse, but having the abdomen reddish, and the head marked with wavy orange lines. The goldsinny, or goldfinny (*Crenilabrus cornubiensis*), I have taken in numbers; it is an extremely beautiful fish. I am certain that others of the Crenalabri will be met with on the coast of Kerry, and even some that are peculiar to the Mediterranean. There is no class of fishes that would be more beautiful in a vivarium, nor none that could be more easily fed, living as they do upon Crustacea and the harder Mollusca, which their jaws, armed with strong conical teeth, enable them to crush. Thus, imagine such a species as the Labrus lupinus—silvery, with three broad longitudinal bands formed of vermillion dots, with yellow pectorals and blue ventrals. The Esocidæ include the garfish (*Esox vulgare*), and which, in the young state, has afforded to me some degree of interest in the examination, particularly with reference to the supposed existence in our seas of a species of Hemiramphus. However, the numerous opportunities I had of examining the different stages of growth confirmed me in the opinion that the Hemiramphus Europæus was no other than the young of the garfish, and that the young state of Esox belone presented an undeveloped form of the upper jaw, but which gradually extended in growth until maturity perfected its equal development with the lower jaw. In July immense numbers enter the harbours of Dingle and Ventry, seeking the fry of other fish, and to spawn, and they are taken in numbers in the sean, little cared for as food, but eagerly bought up by the fishermen for bait. In October and November the young appear. A specimen of the Saury pike (*Scomberesox Saurus*), is in the collection of the Society, which was taken at Ballina, on the coast of Sligo. There are multitudes of others I shall pass over, and some, although taken in the harbours, continue much longer in the fresh water, as the Salmonide, and which merely frequent at periods the salt-water estuaries. The several species of Motella, the third, fourth, and fifth bearded rocklings, are frequent in Dingle and Ventry harbours, and I have taken in a boat-trawl in Ventry the mackerel midge, the beautiful little Motella glauca. Of the Pleuronectidæ many in the young state are to be met with in the harbours. In the summer months the French or lemon sole (*Solea pegusa*), and the variegated sole (*Monochirus variegatus*), are not uncommon in Ventry harbour. The Cyclopteridæ, or suckers, are many of them very frequent; the Cyclopterus lumpus has been taken of large size in Castlemaine harbour, sometimes frequenting the salmon weirs. In some specimens the belly is of a rich azure. The Cornish sucker (*Lepidogaster cornubiensis*), has been taken at low water, attached to the stones in Smerwick harbour, its light tinge of carmine hue attracting attention. All the known British species of the pipe fishes (*Syngnathidæ*), I have obtained on the south-west coast; some are beautifully and vividly marked in the living state, and their singular marsupial habits would render observance of their movements and peculiarities interesting. The deep-nosed pipe fish (*Syngnathus typhle*), I met rather abundantly in the spring months in Dingle harbour, and the æquoreal pipe fish (*Acestra æquorea*), more frequent during summer. The former may be seen of an emerald green, beautifully barred, and the latter with rich tints of yellowish orange, barred with white lines. The Hippocampus brevirostris, or short-nosed sea-horse, has been taken at low water in Smerwick, adhering in its peculiar manner to the rigid stems of Cistoseira. Fish, like the gay plumage of our birds, assume their gaudiest tints in the bridal season, and this is remarkably seen in the Syngnathidæ, in the Cottidæ, and in the gobies. Skates and rays and the singular horny pouches containing the young, are met in all the harbours; but sufficient has been said of the interest that exists to the naturalist, and which a dredge and a small boat-sean can always command the capture of. To follow out more closely such investigations, how interesting would be the experiments resulting from daily examination of the habits of these different fish placed in those large tanks, with shingly and sandy beds, rock, and with sea plants and Confervæ, to please their habits and tastes. Thus, beautiful fields of interest are laid open to the astonishment of the admirers of Nature's works, and the hidden mysteries of the tenants of the deep, unveiled and unravelled to physiological science. In the large cisterns of the vivaria, at the Zoological Gardens, I have watched with interest the perfect lifelessness of the pike and the perch—they appeared like beautifully varnished specimens suspended in the fluid—motionless and inanimate, and no perceptible pulsation of the operculi or gill-covers. Living in an element heavier than air, and suspended in a liquid of nearly the same specific gravity as their own bodies, their forms are beautifully proportioned to offer the least resistable force to progression, while the muscular powers of the tail in some and of the pectoral fins in others are admirably adapted to rapid movements of progression and of elevation. Fishes, of all vertebrated animals, are said to be the least sensitive of emotions of pain or pleasure—their organs of sensation awaken no impressions—rigid in countenance, and eyes almost immovable, and which no tears dim, nor eyelids protect, they seem, with all their beauty of form and brilliancy of colour, mere automata in sensibility, and mute as the silent depths they inhabit. This in the fullest extent is not strictly accurate, for they recognize the hand that feeds them, and follow apparently with joy and sportive liveliness the movements of those who protect them." Mr. Andrews then alluded to the great interest of the vivarium which some years since had been formed and kept up by Mr. Bland, of Derriquin Castle, Kenmare Bay. In an inlet, guarded by reefs of rocks in Sneem harbour, a strong barrier of stones had been closely formed across the entrance, but through which every tide flowed and ebbed, leaving a sufficiency of water within. In this, mullet, whiting, bream, soles, and plaice succeeded best—haddock also did well, but gurnards became paler in colour. Whiting became so tame as to feed out of the hand, and all assembled at the feeding time at the appearance of the tray—all seemed fond of potatoes. This singular character is strikingly shown in the Natatores, particularly in the mergansers and sheldrakes, birds whose formation of bill appears only adapted to feed on the shellfish and soft Mollusca, their habitual diet. When tamed or domesticated they greedily eat potatoes, altogether rejecting the food of their wild habits. Many admirable positions existed on the west coast for the formation of extensive marine store ponds, and where turbot, soles, haddock, cod, and lobsters, could be securely stored and made available in times of scarcity and boisterous weather. Under such circumstances the artificial propagation of the turbot, the sole, and the cod-fish and haddock, could, with the same results, be accomplished from the spawn, as the propagation of the ova from the salmon or trout.

The Chairman considered the subject brought forward was one of great value, not alone to the scientific man, but in a practical and economical point of view. He would confirm, with regard to the fisheries, how useful the formation of those store ponds would be. At the island of Inishtrahull, about six miles from Malin Head, off the coast of Derry, he had observed the islanders were prepared to bring fish to vessels passing the island. The fishermen of that island had very fine whale-boats, which were sheltered and drawn up in a sandy creek. In a store-pond, naturally formed in the island, the fish taken by them, such as turbot and other prime fish, were deposited, and they were always prepared to put fish on board the steamer passing from Sligo to Glasgow, or to Liverpool.

Mr. Ffennell, Commissioner of Fisheries, observed that the concluding part of Mr. Andrews' statement was one of great importance, and as it bore upon the artificial propagation of fish, he would take the opportunity of saying a few words as to what was doing in the salmon fisheries of this country. He would first read a report that had been made to the Commissioners of Irish Fisheries, by Mr. Buist, of Perth. Operations were extensively carried on in December last in a small ford of the Tay, under the direction of Mr. Ramsbottom, of Clitheroe, who has conducted very extensive experiments in pisciculture, both in England and Ireland. The boxes for hatching are about 300 in number, which will contain upwards of 400,000 ova. In the management of the experiments none of the ova are lost, and the old salmon are not in the least hurt by the operation. Mr. Ramsbottom conducted the experiments for

Messrs. Ashworth, of Lough Corrib. The boxes are placed to the free action of running water, and the ova settle, distributed through the gravel that forms the bed of the boxes. In the month of March the fry will have burst their shell. Mr. Buist deserved great credit for publishing regularly the reports of his progress. Mr. Ffennell had received a large quantity of the impregnated ova, and he had sent about 30,000 to Mr. Canes, at St. Woolstan's, for the purpose of carrying on the propagation in the Liffey. Mr. Ffennell also read a report from Mr. Doherty, of Bushmills, who states that he had deposited in boxes about 12,000 ova. He made those deposits on the 1st, 15th, and 26th December last. The boxes are 36 feet long, 18 inches wide and 9 inches deep. The ponds are 88 square yards, by 4 feet deep, and are supplied with a regular stream of water from the river Bush. So far, Mr. Doherty's experiments are going on successfully. Mr. Ffennell said he had a large quantity of the ova, which he was experimenting on at the Custom-house, and he would, from time to time, present to the Society phials of the ova, showing the progressive development, and he would further be most happy to assist any who were desirous of following similar experiments and investigations. Mr. Ffennell was also happy to say that the young fry which created so much interest a[illegible]hibition were thriving and growing well. A few days since he took one with [illegible]t from the tank, of which he had an accurate drawing and measurements [illegible]e. Its length was 4½ inches, showing the size of growth from the time he first got them in June. At that time they were barely an inch in length. Any of the members calling at the Custom-house, it would give him much pleasure to show them.

Mr. Geo. A. Pollock said that in the time of the Earl of Hardwicke the Irish fisheries were considered of the highest importance, and that it was remarked in a correspondence, that it was one of the principles inculcated on the members at their election, that they should support the Irish fisheries.

James Haughton, Esq., of Moorfields, Roebuck, was elected a member.

GREAT PRACTICAL NATURALISTS' EXHIBITION.

At a preliminary Meeting held during the last month, it was unanimously agreed, that the best mode of promoting the science of Natural History was to open an Exhibition, at the Victoria Gardens, Bury, Lancashire, in April, 1854, of every description of preserved quadrupeds, birds, reptiles, insects, shells, and every other branch of Zoology. It was the general opinion of that Meeting, that the only mode they had at present to improve themselves, was by going to see each other's specimens, which often lay at a distance of many miles from each, and took so very much time, and was so expensive; and not having each other's specimens to compare, in many cases they were little improved. It was the opinion, that by having all together, by seeing and comparing them a few times, they might learn as much in seven years as at present; and especially, as there will be living specimens of eagles, hawks, owls, gold, silver, and other pheasants, rare species of wild ducks, red-legged, and other partridges, bitterns, herons, storks, spoonbills, ruffs, godwits, &c., all living on the spot to compare with those stuffed. There will be a General Meeting of all persons interested in the above, held at the house of Mr. G. Hamilton, New-Market Inn, Bury, on Sunday, the 29th day of January, 1854, at two o'clock in the afternoon, precisely.—*G. Booth ; Bolton-street, Bury.*

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